Department of Defense
Information Technology Testbed

Functional and System Use Cases
for
Records Management Application Environment

May 7, 2000

DITT Defense Information Technology Testbed

c3risk INCORPORATED

GENERAL DYNAMICS
Information Systems

ANDRULIS CORPORATION
The Process Company

Contract # 0012283 008
This report provided by c3risk inc

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Executive Summary

The object-oriented modeling workshop was conducted from 28-30 March 2000 at the ANDRULIS Corporation Integrated Decision Support Center (IDSC) in Arlington, Virginia. Representatives from the Department of Defense (DoD) Information Technology Testbed (DITT) and the Center for Army Lessons Learned (CALL), were in attendance in addition to support from c3risk inc (c3risk), General Dynamics Information Systems (GDIS) and ANDRULIS Corporation. The session objective was to migrate from the IDEF0 notation to OO techniques in order to establish an OO syntax that will be used by the DITT to articulate enterprise functional requirements and CALL specific requirements for a prototype to a development team.

The planned outcomes for the workshop were to:

- Develop object-oriented (OO) use cases for Process Document based upon the previously developed CALL TO-BE model sub-activity – Process Acquisition
- Develop functional requirements to support the Process Document activity
- Ensure that each functional requirement was represented in at least one use case
- Ensure improvement opportunities developed during the TO-BE process modeling were addressed as functional requirements

Prior to validating the proposed use cases, the participants identified environmental constraints that would underpin the work. They are:

- Records are documents
- Documents are in an electronic form
- Documents are received, processed and become records

Specific attention was directed at determining a standardized electronic document object that will be used in the first prototype development. The use cases are developed so that similar organizations with like needs can implement them by constraining the use cases down to their mission specific requirements by adding to the enterprise use case. For the CALL prototype, Defense Messaging System (DMS) mail message objects are considered a viable object for test since DMS mail messages are highly structured.

For the remainder of the workshop the participants reviewed and validated the proposed use cases and their related functional requirements.

At the conclusion of the session, all participants agreed to an additional follow-on meeting that would further refine both the use cases and the functional requirements. That meeting was conducted on 12 April 2000 at the GDIS site with representatives of the DITT, GDIS, and c3risk. The result of that effort provided 16 Process and System Enterprise use cases containing 59 functional requirements. These use cases were developed with the intent that they could be used by other organizations seeking to establish an electronic document to records environment that included meeting organization specific needs.

Future efforts will include the use of DoD Data Standards for the portability of records from one certified Records Management Application (RMA) to another.

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Preface

The reader should be aware of both endnotes and footnotes within the document. Endnotes are used in the main body of the text and footnotes are used in the use case chapter.

This document is designed for the use of other organizations. It is believed other organizations will separate the use cases from the main document. It was therefore determined that relevant footnote information should start with “1” in order to ensure clarity and consistency to the separated product – the use cases.

1 Introduction

1.1 Workshop Overview

The object-oriented modeling workshop was conducted from 28-30 March 2000 at the ANDRULIS Corporation Integrated Decision Support Center (IDSC) in Arlington, Virginia. Representatives from the Department of Defense (DoD) Information Technology Testbed (DITT) and the Center for Army Lessons Learned (CALL), were in attendance in addition to support from c3risk inc (c3risk), General Dynamics Information Systems (GDIS) and ANDRULIS Corporation (see Appendix A for a full list of attendees).

The planned outcomes for the workshop were to:

- Develop object-oriented (OO) use cases for Process Document based upon the TO-BE model sub-activity – Process Acquisition
- Develop functional requirements to support the Process Document activity
- Ensure that each functional requirement was represented in at least one use case
- Ensure improvement opportunities developed during the TO-BE process modeling were addressed as functional requirements

- The initial activities of the workshop were for the participants to sign in (see Appendix A), determine workshop ground rules and state their expectations for the weeks' activities. This was followed by an overview briefing of OO methodology and the transition from IDEF0 [1] modeling to OO [2]. Specific areas covered were: how the use case format maps to the components of an IDEF0 model, the approach used to develop the proposed use cases, use case assumptions, CALL activity prioritization, entity classes, proposed use case and entity class diagrams.

Prior to validating the proposed use cases, the participants discussed the assumptions that would underpin their development. These assumptions are:

- Records are documents
- Documents are in an electronic form
- Documents are received, processed and become records

Specific attention was directed at determining a standardized object that will be used in the first prototype development. The use cases are developed so that similar organizations with like needs can implement them by constraining the use cases down to meet their mission specific requirements by adding to the enterprise use case. For the DITT prototype, an X.400 Defense Message System (DMS) mail message type object is considered a viable object for test since X.400 mail messages are highly structured.

The next activity was for the participants to review and validate each of the proposed use cases. The participants stated their concerns in relating the pure use case format with the previously developed IDEF0 model and improvement opportunities. The discussion resulted in the group using a matrix, which linked the IDEF0 activities and their

improvement opportunities as the primary means of validating the functional requirements and their associated use cases. This matrix can be found at Appendix C. The matrix also includes the prioritization tally of the functional requirements. The complete set of use cases can be found in Section 2.

It should be noted that the focus was on the Process Document use cases. Participants identified this activity as the foremost priority during the prioritization activity at the February TO-BE workshop[3]. The over-arching Process Document use case was further decomposed to increasing levels of detail by taking each step in the main flow and developing them into distinct use cases.

The participants also validated a set of support use cases they felt were applicable across all processes. They are:

- Perform Activity-Level Backup
- Provide Metric
- Provide Status

The complete set of all the 16 use cases can be found at Section 2.

Within each developed use case the session participants validated or developed additional functional requirement statements supporting the main sequence of events. The complete set of general functional requirements can be found at Section 3.

An initial set of entity classes were developed with some proposed definitions. Specific entities will be accomplished during individual interviews to be conducted after final agreement on the functional requirements to be implemented in the design prototype. Throughout the workshop, the design team referred to the use case diagram and the entity class diagram (see Section 4.3) to illustrate the inter-relationships between use cases and the data needed for design and development.

At the conclusion of the workshop, the participants agreed to an additional follow-on meeting that would further refine both the use cases and the functional requirements.

The following week the participants were asked to complete a prioritization of the session developed functional requirements in order to gain a sense of their importance in the developmental cycle. The results can be found at Appendix C.

The follow-on meeting was conducted on 12 April 2000 at the GDIS site with representatives of the DITT, GDIS, and c3risk. The result of that effort provided 16 Process and System Enterprise use cases (see Section 2) containing 59 functional requirements (see Section 3). These use cases were developed with the intent that they could be useful to other organizations seeking to establish an electronic document processing system. CALL Mission Specific use cases and mission specific functional requirements can be found at Appendix B.

1.2 Background

At the outset of the project the contractor team (c3risk, GDIS and ANDRULIS) agreed to meet and address the salient project implementation issues and to provide recommendations for implementation to the DITT Core Team.

Of particular interest was the principles that were identified in the many DoD Records Management Task force reports that set out the need for each organization to utilize a baseline set of functional requirements but to augment them with mission specific requirements before the procurement of a Records Management Application. The DoD Certification Program provides the opportunity for industry developers of records management software to receive certification through the Joint Interoperability Test Command. Organizations of the DoD and others seeking to purchase one of the many certified applications must still identify, document and present their mission specific requirements to prospective vendors. It is only through the addition of mission specific requirements that an organization can be assured their implementation will meet their needs. Without taking the time and producing mission needs the organization cannot be assured that even a certified application will provide the value they are seeking.

It is this principle that was used in developing the Functional and System Use Cases for the Records Management Environment at an enterprise level. It is hoped that these enterprise level use cases can be constrained down to meet organizational mission specific needs. This hypothesis will be tested as a result of the CALL mission specific use cases found in Appendix B to this report. The reader is invited to review these use cases as they present the first instance and use of the enterprise use cases found in Section 2 of this report. The reader may receive updates on the status of the project test by visiting the DITT web page or by contacting one of the DITT project officers.

On 20-21 December 1999 a model assessment and project scoping meeting was conducted between representatives of GDIS, c3risk and ANDRULIS. The purpose of the meeting was to:

- Provide a current status and an assessment of the CALL AS-IS model developed by GDIS (September 1999 and undelivered December 1999 versions)
- Define the roles and responsibilities of all participants
- Develop project assumptions
- Determine the report generation process flow
- Discuss and resolve the requirements of the collaborative meetings
- Review and update the project plan

The following month, 11-13 January 2000, Collaborative Session I, an AS-IS modeling workshop was conducted at the ANDRULIS Integrated Decision Support Center. The DITT Core Team was in attendance, in addition to support from c3risk, GDIS and ANDRULIS.

The outcomes for the workshop were to:

- Validate the high level CALL Mission model
- Prioritize the implementation of the major activities
- Develop the CALL DITT AS-IS model
- Determine Inputs and Outputs (IOs)
- Review project schedule and address appropriate issues
- The Collaborative Session II, TO-BE modeling workshop, was conducted from 8-11 February 2000 at the CALL Information Technology Center at Fort Leavenworth, Kansas. Representatives from the CALL and DITT Core Team participated with support provided by c3risk inc, GDIS and ANDRULIS Corporation.

The planned outcomes for the workshop were to:

- Validate purpose, scope and viewpoint of the CALL TO-BE IDEF0 model
- Develop a TO-BE IDEF0 model in the AS-IS identified prioritized area of RESEARCH CALL DB
- Prioritize within the RESEARCH CALL DB area to structure further decomposition
- Identify additional improvement opportunities

This was followed by a migration workshop that was conducted from 28 February to 2 March 2000. The purpose of the workshop was to allow the contract support team to develop proposed use cases and entity classes for the functional users to validate at the TO-BE modeling workshop.

Specifically, the planned outcomes for the workshop were to:

- Develop straw OO use cases based upon the previously developed IDEF TO-BE model
- Develop proposed functional requirements to support the use cases
- Develop candidate entity classes for systems development
- Develop candidate entity class relationships for systems development

The detailed results for all the above workshops can be found in the Workshop Reports outlined in the reference section of this document.

2 Functional and System Use Case for RMA Environment

The primary outcome of the Object Oriented Workshop was the development of OO use cases and their associated functional requirements with certain constraints. These included knowing the structure of the document and that the document was in electronic form. This subsequent work was conducted on 12 April 2000 at the GDIS site with selected representatives from DITT, GDIS and c3risk.

Below are the 16 Functional and System Enterprise use cases and 59 associated functional requirements that resulted from these two working sessions. These use cases were developed with the intent that they could be useful to other organizations seeking to establish a reliable electronic document to records management processing environment.

The enterprise functional and system use cases are provided as a base line set of specifications for setting up a records management application as an integral part of a mission environment. Both the functional requirements and the use cases are designed in order for DoD agencies to examine their own unique needs and engage in Design Aggregation[4]. An example of Design Aggregation can be found at Appendix B. The enterprise functional and system use cases have been analyzed and additional functionality and systems constraints have been added. Appendix B would therefore provide the CALL to select from the DoD Certified RMA list prospective vendors who can address the CALL mission needs prior to purchase. Design Aggregation allows the organization to eliminate the need to test an RMA by using one of those pre-certified on the DoD list and limit testing to mission specific needs as part of a whole design solution prior to procurement and implementation. By engaging vendors from a position of knowledge of mission requirements additional to basic RMA functions, an organization can procure the appropriate technologies to meet their needs.

The original models and requirements are provided in the DoD Information Technology Testbed OO Workshop Report, 8 – 11 February 2000. The original work utilized the CALL mission process to baseline a real world mission process in order to analyze and develop enterprise usable products.

The use of DoD Data Standards will be approached in future work. It is imperative that one of the original hypotheses of the DoD Records Management Task Force be tested in a mission environment. Specifically – easy, cost efficient migration of records between one certified RMA solution and another. It is offered that if mission needs dictate the movement from one RMA solution to another, then certain basic data are compatible between products and therefore support a lower cost higher reliability factor during the migration process for the organization.

1. Log Received Document Use Case

Purpose
This use case logs into the Receipt Log all documents that are received and logs into the Error Log all received documents that are not compliant.

Functional Requirements
A. The system will provide the capability to output for viewing, printing, searching and saving a log of each document received
B. The system will provide the capability to output for viewing, printing, searching and saving an error log of each non-compliant document
C. Document with viruses will be entered into the error log
D. The system will uniquely identify all incoming documents
E. The system will populate the Received Document Attribute Values upon receipt of a Document
F. The system will assign a File Classification to each document based on the Received Document File Classification

Actor
- Document Sender

Pre-conditions
- Received Document is in a System Mailbox[1]
- The object (document and associated attributes) format is known and it has been "mapped" to this process (mapped means that the system understands the format and can process it)

Main Flow
1. Verify the format of each document is compliant[2]
2. For each Received Document make an entry in the Receipt Log
3. Store each Received Document in Work In Progress Repository
4. For each Received Document store a unique ID in the DocumentAttributeSet
5. Generate receipt notification to sender (contains # of documents received, # of non-compliances, # and type of viruses, # of documents to be processed)
6. Populate the Document Attribute Set and Lifecycle Attribute Set of each document[3]
7. Populate the predefined attribute values of each Document
8. Perform Activity-level Backup

Sub-flows - None

Alternative Flows
1. A Document is non-compliant

[1] The SystemMailbox is the term identifying the space and/or place and is not a constraining design factor
[2] Compliance will mean that the document is an object that can be processed by the system and all its predefined components are present.
[3] These are created using the data from the document when the object is mapped for the system

- Reference the Document in the Error Log as non-compliant
- Issue a Non Compliant Document Notification to the Acquisition Sender

2. Output Error Log
3. Output Receipt Log

Entity classes

- AcquisitionSenderReceiptNotification
- AgencyUniqueAttributeValueSet
- Document
- DocumentAttributeSet
- ErrorLog
- LifecycleAttributeSet
- NonCompliantDocumentNotification
- PredefinedAttributeMapping
- ReceiptLog
- ReceivedDocument
- SystemMailbox
- WorkInProgressRepository

Glossary

- Received Document: Documents received by the organization that will be set aside as a record
- Document Sender: The entity who puts an Document in the system mailbox
- System Mailbox: The SystemMailbox is a queue of Received Documents

References:
ACP 123 – Common Messaging Strategy and Procedures

2. Check Document for Viruses Use Case

Purpose
This use case is to check a Document for viruses, attempt to clean the Document if it has viruses, and issue a Virus Indicator Contaminated Notice and stop processing of the Document if the Document has viruses that cannot be removed.

Functional Requirements

A. The system will virus check[4] every document within a Received Document
B. The system will assign a Virus Contamination Indicator that indicates the document was either "contaminated" or "not contaminated" in the Error Log
C. The system will remove all viruses from every document with a Virus Contamination Indicator of "contaminated"
D. The system will provide the capability to identify every document that failed the "remove viruses" activity
E. The system will stop the processing of a document of with a Virus Contamination Indicator equal to "contaminated" and is identified as failing the "remove viruses" activity and move the document into a controlled (quarantined) area
F. The system will provide the capability to make available a Virus Indicator Contaminated Not Cleaned Notice for every document moved into the controlled (quarantined) area
G. The system will provide the capability to make available a Virus Indicator Contaminated Cleaned Notice for every document that has a "contaminated" Virus Contamination Indicator that includes the virus(es) removed including the name of the virus(es)
H. The system will make available for viewing, printing and saving all notices of the Check Document for Viruses Use Case

Actor
- Information System Security Officer
- Records Manager

Pre-condition

A Received Document is available in SystemMailbox

Main Flow
1. Scan document for virus
2. Set Virus Contamination Indicator to "not contaminated"

Sub-flows - None

Alternative Flows
1. Virus found in Document
- Set Virus Contamination Indicator to "contaminated"
- Set the document away from documents to be processed

[4] Use of a commercial virus detection software that is designed to detect and clean the object of the virus(s)

- Make available Virus Indicator Contaminated Notice
- Stop processing of the Document

Entity classes
- Document
- ReceivedDocument
- SystemMailbox
- VirusIndicatorContaminatedNotice

Glossary - None

References - None

3. Process Document Use Case

Purpose
Ensure that a Received Document becomes an authentic record in a reliable environment

Functional Requirements
A. The system will handle all incoming documents at the level of system security accreditation
B. The system will handle the document in accordance with its assigned security classification level
C. The system will ensure the authenticity of a document until it is made available as a Preserved Document

Actors
- Security Officer (through Verify and Set the Security Classification use case)
- Records Management Specialist (through Set Attributes use case)
- Lexicographer (through Identify Prospective Thesaurus Terms use case)
- Archive Technician (through Set Attributes use case)
- Thesaurus (through Identify Prospective Thesaurus Terms)

Pre-conditions
1. The document is logged
2. The document is in the Work In Progress Repository
3. The mapping of Document attributes to Preserved Document attributes has been defined
4. The document has been virus checked

Main Flow
1. Build Search Index
2. Verify and Set the Security Classification Attribute
3. Locate Privacy Act Information
4. Identify Prospective Thesaurus Terms
5. Set attributes
6. Set aside Preservable Document

Sub-flows - None

Alternative Flows - None

Glossary
- System Security Accreditation: The certification level that designates the material that can be processed and managed by the system
- Security Classification Level: The highest security classification level of the document
- Thesaurus: Rule set of terms and words
- Search Index: Terms and words identified within the document
- Privacy Act: Public Law – Privacy act of 1974 and as amended

References

- DoD STD 5015.2
- This is an excerpt from the emerging security classification/declassification portion being added to the DoD STD 5015.2

C4.1.22. Record History. The RMA shall provide a capability to provide a history of each record by tracking changes to the following metadata items and appending them to a record history file [EO 12958, Sections 3.4, 3.5, and 3.6, 32 CFR 2001.21, Section (d), references (pp) and (tt)]:

C4.1.22.1. Current Classification.
C4.1.22.2. Reviewed On.
C4.1.22.3. Reviewed By.
C4.1.22.4. Downgraded On.
C4.1.22.5. Downgraded By.
C4.1.22.6. Declassified On.
C4.1.22.7. Declassified By.
C4.1.22.8. Upgraded On.
C4.1.22.9. Upgrade Authority.
C4.1.22.10. Declassify On.
C4.1.22.11. Originating Organization.
C4.1.23. Displaying Current Metadata. The RMA shall display only current metadata information; however, the user will be allowed to view the historic metadata information, if requested.
C4.1.24. Classifying Metadata Fields. RMAs shall provide a capability whereby selected metadata fields may be classified. Authorized individuals shall have the ability to specify which metadata fields require classification for a given organization.

4. Build Search Index Use Case

Purpose
This use case supports Locate Privacy Act Information, Identify Prospective Thesaurus Terms and Search Processed Document use cases.

Functional Requirements
A. The system will provide the capability to find the unique words and unique acronyms within the Document
B. The system will provide the capability to find the positions of each word and acronym within the Document
C. The system will provide the capability to output for viewing printing and saving unique words and unique acronyms and their positions

Actors - None

Pre-condition
- A Document is available in Work In Progress Repository

Main Flow
1. Extract non-stop words and acronyms
2. Sort words and acronyms in the document
3. Link words in index to locations of their occurrences in the document
4. Perform Activity-level Backup

Sub-flows - None

Alternative Flows - None

Entity classes
- Acronyms
- Document
- SearchIndex
- Word
- WorkInProgressRepository

Glossary
- Stop Word: Repeating words such as articles that have been determined to be of little significance (e.g. the, a, of)

References - None

5. Verify and Set the Security Classification Attribute Use Case

Purpose
This use case determines the proper security level classification for a Document based on the security level markings in the Document and issues notification if either the proper security level classification is different from that provided the Document or exceeds the System Accreditation Level.

Functional Requirements
A. The system will provide the capability to compare security classification level markings of the document and assign the highest security classification level found to the Processed Document
B. The system will provide the capability to output for viewing, printing and saving a security classification level discrepancy notification when the Processed Document security classification level is different than the document security classification level
C. The system will provide the capability to "stop the processing of a document" when the identified Security Classification Level is higher than the System Accreditation level
D. The system will provide the capability to output for viewing, printing and saving a security system accreditation discrepancy notification when a "stop the processing of a document" occurs

Actor
- Information System Security Officer

Pre-condition
- Locations for security classification markings defined for formats of the Document

Main Flow
1. Identify locations for security classification markings in the Document
2. Inspect security classification marking locations to determine the highest security classification marking level for the Document
3. Verify the highest security classification marking level matches the level specified for the Document
4. Verify the highest security classification marking level matches or is less than the System Accreditation Level
5. Perform Activity-level Backup

Sub-flows - None

Alternative Flows
1. Document is marked "Secret for Training Purposes Only"
2. The highest security classification marking level matches the level specified for the document
   - Make available Security Classification Level Discrepancy Notification
   - Set the security level attribute for the Document to be that of the highest security classification marking level

3. The highest security classification marking level exceeds the System Accreditation Level
    - Stop the processing of the Document
    - Make available System Security Violation Notification

Entity classes
- Document
- SecurityClassificationLevelDiscrepancyNotification
- SystemAccreditationLevel
- SystemSecurityViolationNotification

Glossary
- Security Classification Level: The security classification assigned to the document
- Security Classification Marking: The indicia on or within the document that identifies security classification
- System Accreditation Level: The certification level that designates the material that can be processed and managed by the system

References - None

6. Locate Privacy Act Information Use Case

Purpose
This use case identifies the instances of Privacy Act information and their locations in a Document.

Functional Requirements
A. The system will provide the capability to output for viewing, printing and saving matches between the document and the Privacy Act List

Actors - None

Pre-conditions
- The Search Index for the Document is available

Main Flow
1. Find matches in the Search Index with expressions in the Privacy Act List
2. Extract locations of matches
3. Build a Document Privacy Act Instance List
4. Perform Activity-level Backup

Sub-flows - None

Alternative Flows - None

Entity classes
- DocumentPrivacyActInstanceList
- PrivacyActList
- SearchIndex

Glossary
- Privacy Act: Public Law – The Privacy Act of 1974 and as amended
- Privacy Act Instances: Identified privacy act matches in the document

References - None

7. Identify Prospective Thesaurus Terms Use Case

Purpose
This use case identifies terms from a Document that are not stop words, not in the Thesaurus, and not in the Previous Thesaurus Candidate Term List.

Functional Requirements
A. The system will provide the capability to output for viewing, printing and saving all terms that are not "stop words", not in the Thesaurus and not in Previous Thesaurus Candidate Term List

Actors
- Lexicographer
- Thesaurus

Pre-condition
- The Search Index for the Document, Thesaurus, and Previous Thesaurus Candidate Term List are available

Main Flow
1. Identify terms in the Search Index that are not in Thesaurus
2. Identify non-Thesaurus terms that are not in the Previous Thesaurus Candidate Term List
3. Update Thesaurus Term List
4. Make available Thesaurus Term List
5. Perform Activity-level Backup

Sub-flows - None

Alternative Flows - None

Entity classes
- PreviousThesaurusCandidateTermList
- SearchIndex
- Thesaurus
- ThesaurusTermList

Glossary
- Stop Word: Identified set of words having little significance (e.g. the, a, of)
- Term: A single word or acronym or phrase
- Thesaurus: A list of words, acronyms and phrases
- Previous Thesaurus Candidate Term List: A list of previously submitted words that have been determined not to be part of the Thesaurus

References - None

8. Set Attributes Use Case

Purpose
This use case populates the Document, Lifecycle and Agency Unique Attribute Sets with values contained in the Document, issues notifications for required attribute values that have not yet been provided for the Document, and enables to viewing of attribute values after all of the required attribute values have been provided.

Functional Requirements
A. The system will populate the Document and Lifecycle Attribute Sets to each Received Document
B. The system will populate Agency Unique Attribute Sets when provided by the document sender to each Received Document
C. The system will provide the capability to output for viewing, printing and saving attribute values of the document
D. The system will provide the capability to output an Unpopulated Attribute Value Notice when the document does not contain a required Attribute value
E. The system will forward the Unpopulated Attribute Value Notice to an identified individual based upon the Unpopulated Attribute Value Notice Rule Set
F. The system will provide the capability to interrupt the processing of a set of Processed Documents based on any attribute value or presence of search terms prior to the Processed Document becoming a Preserved Document
G. The system will provide the capability to output for viewing Processed Document attributes <<Modifiable Processed Document Attribute List>> prior to the Processed Document becoming a Preserved Document
H. The system will provide the capability to modify attributes of the Modifiable Processed Document Attribute List during the "viewing all Processed Document attributes" activity

Actors
- Records Management Specialist
- Archive Technician

Pre-conditions
- A document is available in Work In Progress Repository
- Attribute Required values are identified

Main Flow
1. Extract Document, Lifecycle and Agency Unique Attribute values from document
2. Check for all required attribute values
3. Make available attribute values
4. Perform Activity-level Backup

Sub-flows - None

Alternative Flows
1. Unpopulated Attribute values exist

- Send Unpopulated Attribute Value Notice
- Accept attribute values from an interactive session

Entity classes
- AgencyUniqueAttributeSet
- AttributeSet
- Document
- UnpopulatedAttributeValueNotice
- UnpopulatedAttributeValueNoticeRuleSet
- WorkInProgressRepository

Glossary
- Agency Unique Attribute – Values provided by the document sender

References
- None

9. Set Aside the Preserved Document Use Case

Purpose
This use case verifies that a Processed Document is reliable and complete and moves the Processed Document into a certified records management environment

Functional Requirements
A. The system will provide the capability to output for viewing, printing and saving a Processed Document consisting of the document, its attribute values, and Privacy Act List matches
B. The system will ensure a complete and reliable Processed Document exists before it is made available as a Preserved Document

Actors - None

Pre-condition
- All Processed Document components are complete and exist in the Work In Progress Repository

Main Flow
1. Verify completeness of Processed Document
2. Move the Processed Document to a Lifecycle Repository
3. Verify Preserved Document is complete in the Lifecycle Repository
4. Destroy back-up copy

Sub-flows - None

Alternative Flows
1. Processed Document not complete
2. Determine missing component
3. Restore component from back-up copy

Entity classes
- ActivityLevelBackup
- AttributeSet
- Document
- DocumentPrivacyActInstanceList
- LifecycleRepository
- ProcessedDocument
- WorkInProgressRepository

Glossary - None

References - None

10. Manage Preserved Record Use Case

Purpose
This use case ensure the authenticity of a Preserved Record until its disposition, manage the disposition of a Preserved Record according to the value of its File Classification attribute, and make the components of a Preserved Record available for viewing, printing, and saving.

Functional Requirements
A. The system will ensure the authenticity of the Preserved Record until it is made available for disposition
B. The system will provide the capability to output for viewing, printing and saving a copy of the Preserved Record and all its components
C. The system will provide the capability to manage each Preserved Record in accordance with File Classification attribute
D. The system will provide the capability to associate the File Classification attribute with the File Classification Disposition Rule Set
E. The system will provide the capability to manage each Preserved Record with a unique identifier
F. The system will provide the capability to output for viewing, printing and saving Preserved Record Unique identifier report
G. The system will make available all attribute values, index terms and terms contained in the contents of the Preserved Record as "searchable" data of the Preserved Record
H. The system will provide the capability to view all Preserved Record attributes and modify those defined by the Modifiable Preserved Record Attribute List
I. The system will provide the capability to modify attributes of the Modifiable Preserved Record Attribute List during the “viewing Preserved Record attributes activity

Actors
- Records Management Specialist
- Historian Archivist

Pre-condition
- Preserved Record is stored in a certified records management environment

Main Flow
1. Determine Preserved Record disposition based on File Classification
2. Maintain Preserved Record as provided according to disposition
3. Make notification of pending Preserved Record disposition

Sub-flows - None

Alternative Flows
1. Make available values in the Agency Unique Attribute Value Set
2. Make available attributes in the Modifiable Preserved Record Attribute List
3. Modify attributes in the Modifiable Preserved Record Attribute List
4. Make available a copy of the Preserved Record

5. Make available a Unique Identifier Report for the certified records management environment
6. Search Preserved Record attributes

Entity classes

- AgencyUniqueAttributeValueSet
- KnowledgeRepository
- ModifiablePreservedRecordAttributeList
- PreservedRecord
- UniqueIdentifierReport

Glossary - None

References

- DOD 5015.2-STD

11. Generate Dissemination Copy Use Case

Purpose
This use case makes available a Dissemination Copy of a Preserved Record.

Functional Requirement
A. The system will provide the capability to make available a Dissemination Copy of a Preserved Record in a standard format upon demand
B. The system will provide the capability to redact attributes, words and phrases based on the Redacted Dissemination Copy Rule Set
C. The system will provide the capability to make an un-redacted Dissemination Copy available to an Authorized User

Actor
- Authorized User

Pre-conditions
- A Request Dissemination Copy is received
- The requested Preserved Document is in the Knowledge Repository
- Redaction rule set defined

Main Flow
1. Create a Dissemination Copy from the Preserved Document
2. Make available the Dissemination Copy

Sub-flows - None

Alternative Flows
1. Referenced Preserved Document not available
2. Unable to generate Dissemination Copy
3. Provide un-redacted Dissemination Copy to Authorized User

Entity classes
- DisseminationCopy
- KnowledgeRepository
- PreservedRecord
- RedactedDisseminationCopyRuleSet
- RequestDisseminationCopy

Glossary
- Authorized User: Person or personality recognized through access protocols who can utilize the system
- Dissemination Copy: The facsimile of the Preserved Record that is used in response to a request

References - None

12. Provide Metric Use Case

Purpose
This use case provides a Metrics Report regarding the activities involved with the handling of Processed Documents.

Functional Requirement
A. The system will provide the capability to output for viewing, printing and saving metrics of the Processed Document

Actor
- Authorized User

Pre-condition
- Document has been logged.
- Metric events have been identified
- Document has not been set aside as a Preserved Record

Main Flow
1. Capture events
2. Process event
3. Make metric available

Sub-flows - None

Alternative Flows - None

Entity classes
- Metric
- Event

Glossary - None

References - None

13. Provide Status Use Case

Purpose
This use case provides a StatusReport on the processing activity of a Received Document

Functional Requirements
A. The system will provide the capability to output for viewing, printing and saving the current activity of any and/or all document from when it is logged until it is set aside as a Preserved Record
B. The system shall provide notification if there are no documents meeting the requested status criteria.

Actor
- Authorized User

Pre-condition
- A Received Document has been received
- A Received Document has not been set aside as a Preserved Record

Main Flow
1. Set Document status based on the current activity
2. Make status available

Sub-flows - None

Alternative Flows - None

Entity classes
- DocumentRepository
- ProcessedDocument
- Status
- SystemMailbox
- WorkInProgressRepository

Glossary - None

References - None

14. Perform Activity-level Backup Use Case

Purpose
This use case backs up a Processed Document by saving the results from processing of the Processed Document for the last activity completed.

Functional Requirements
A. The system will ensure that if document processing is interrupted the processing can be continued from the last completed activity

Actor - None

Pre-condition
- A Document has been logged in
- A Document has not been set aside as a Preserved Record

Main Flow
1. Create activity product backup
2. Store new activity product backup
3. Verify prior activity product backups

Sub-flows - None

Alternative Flow
1. Prior Activity Product Backup is corrupt
   - Regenerate backup

Entity classes
- ActivityLevelBackup
- AttributeList
- DocumentPrivacyActInstanceList
- ProcessedDocument
- ReceivedDocument
- SearchIndex

Glossary - None

References - None

15. Search Processed Document Use Case

Purpose
This use case provides the capability of searching on the attributes and contents of a Processed Document.

Functional Requirements
A. The system will provide the capability to search on the set of attributes for all documents regardless of the security classification level
B. The system will provide the capability to search populated Attribute Values on each document until it becomes a Preserved Record
C. The system will provide the capability to search on the content of a Processed Document and its components
D. The system shall provide notification if there are no documents meeting the requested search criteria

Actor
- Authorized User

Pre-condition
- Authorized user is making the search query request
- Attributes for the Processed Documents are available
- A Document has been logged in
- A Document has not been set aside as a Preserved Record

Main Flow
1. Accept Search Query
2. Return the results of the Search Query

Sub-flows - None

Alternative Flows - None

Entity Classes
- AgencyUniqueAttributeSet
- AttributeSearchQuery
- AttributeSet
- ProcessedDocument

Glossary - None

References - None

16. Transfer or Retire a Preserved Record Use Case

Purpose
This use case takes the appropriate steps to transfer or retire a Preserved Document when identified by its disposition schedule.

Functional Requirements
A. The system will provide the capability to transfer/retire the electronic form of a Preserved Document with all its attributes
B. The system will provide the capability to output for viewing, printing and saving attributes of a Preserved Document for use in the Transfer Retire Report
C. The system will provide the capability to add to the Record History Log the returned information from the receiving Transfer Retire Agency

Actor
- Records Management Specialist

Pre-condition
- A Preserved Record in the records has been identified for transfer or retirement.
- Disposition schedule is available

Main Flow
1. Disposition Schedule identified a Record for transfer or retirement
2. Make available Transfer Retire Report
3. Make available Record for transfer or retirement
4. Create Record History Log entry for transferred or retired Document

Sub-flows - None

Alternative Flows
1. Data returned from receiving Transfer Retire Agency
   - Update Record History Log entry for Record

Entity classes
- DispositionSchedule
- Record
- RecordHistoryLog
- Records Repository
- TransferRetireReport

Glossary
- Transfer Retire Agency: Organization receiving transferred records
- Transfer Retire Report: The document detailing records sent and received by the sending and receiving organizations
- Record History Log: Register of record transfer information

References - None

3 Use Case Diagrams

Below are the use case illustrations that comprise and support the activity Process Document within an Enterprise Environment. The Process Document use case maps to the Process Document/Record activity (A413) in the TO-BE IDEF0 process model, however the illustrations depict the Functional and System Enterprise Use Cases. Some use cases, such as "Log Received Document" and "Manage Preserved Record", have been added to support Process Document. Relationships between actor and use case or between use cases represent a message that initiates or requests some processing and is labeled with the message meaning. For additional information on how to read a use case diagram see Appendix D, section D-1.

Illustration immediately below depicts the primary use case, Process Document, and its relationship with other use cases and actors.

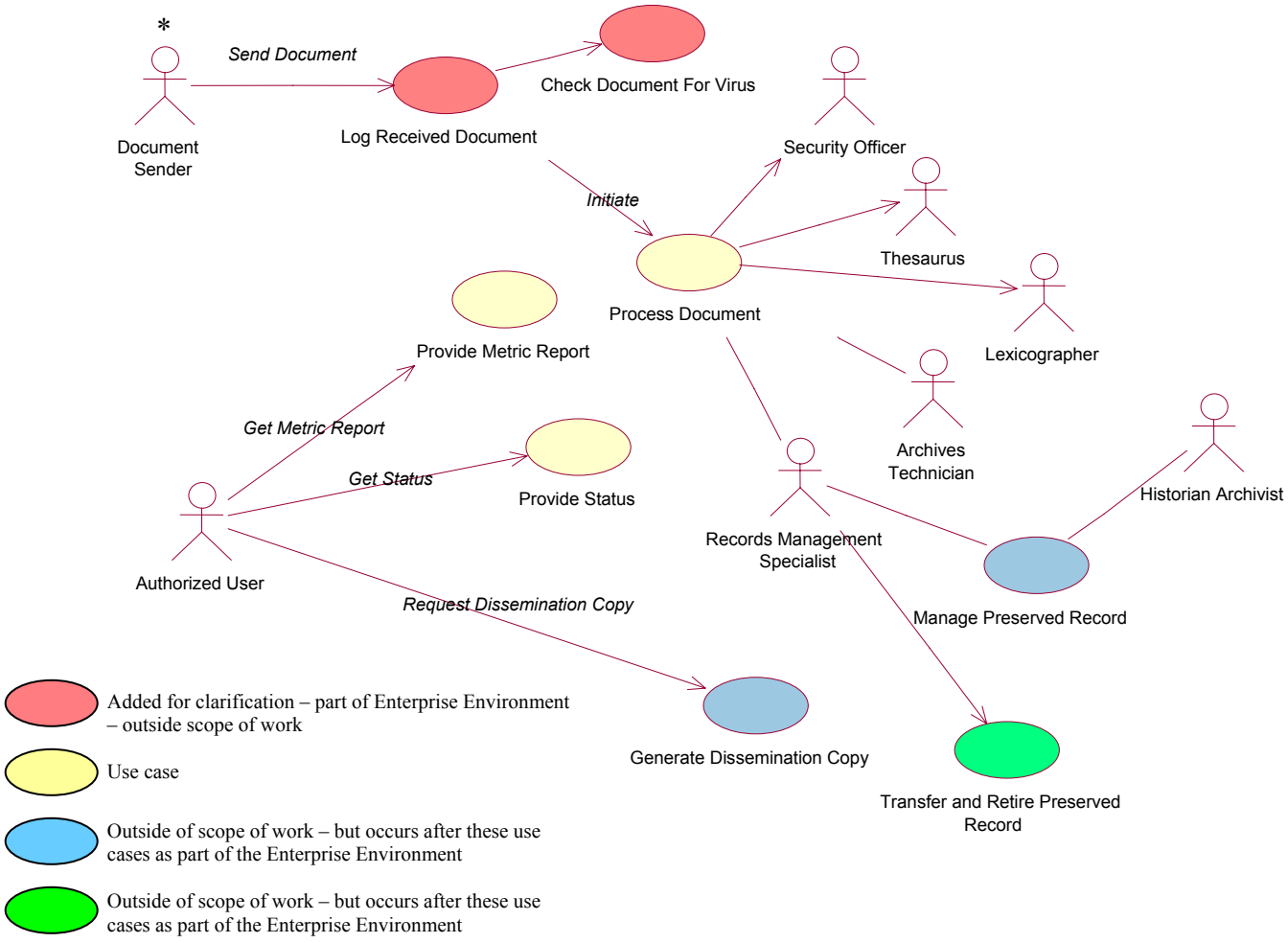

Figure 1. Process Document use case and relationships

The following use case diagram depicts the internal interactions within the Process Document use case between the actors and its associated use cases.

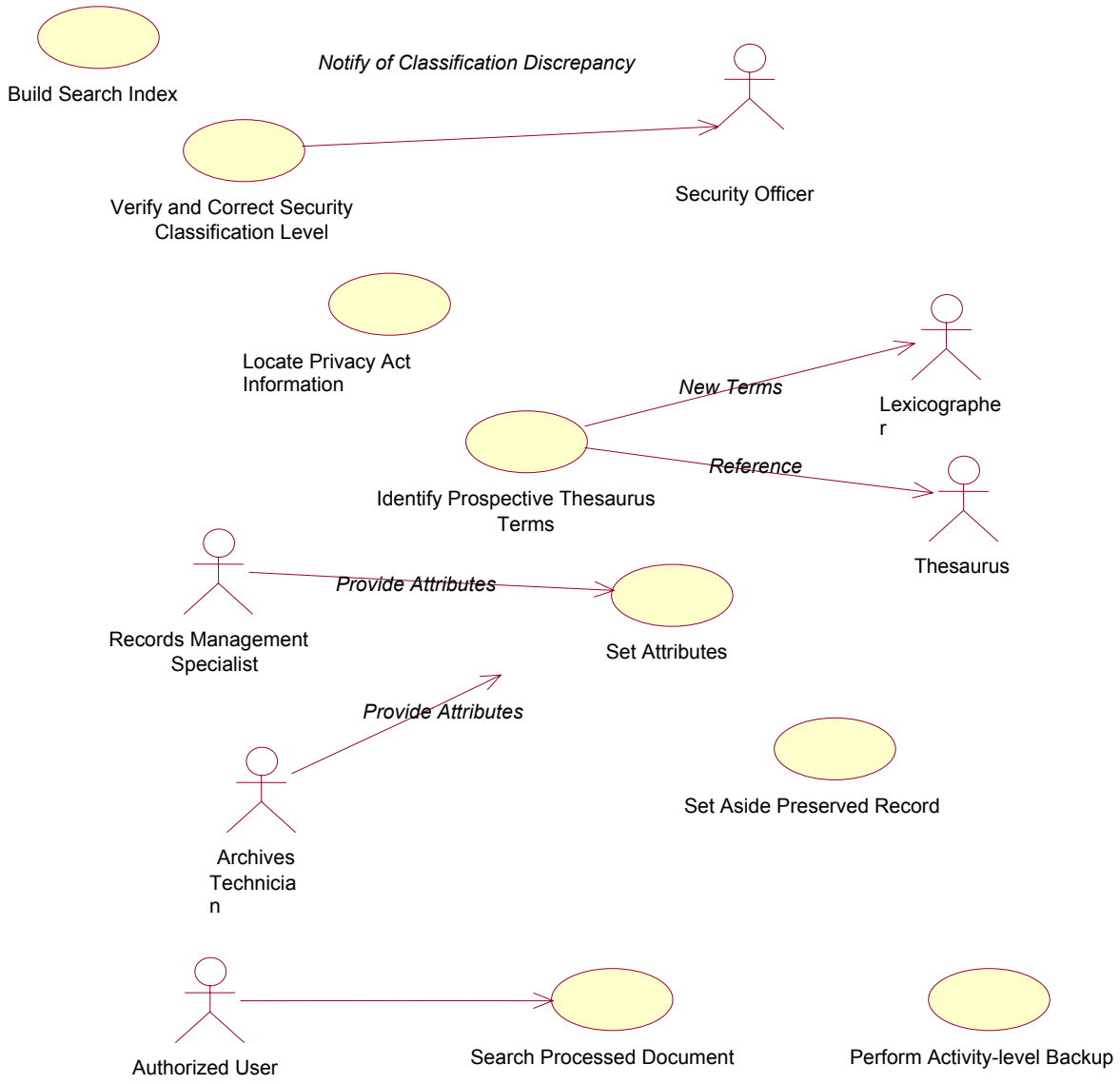

Figure 2. Process Document relationships between actors and use cases

4 Functional Requirements

4.1 Overview

Listed below are the 59 functional requirements developed using the OO Modeling Workshop results and the follow on meeting. These requirements were derived from a careful analysis of the CALL TO-BE model and the improvement opportunities that were developed during the Collaborative Session II. Appendix C provides the relationships between the proposed functional requirements with the TO-BE model and the improvement opportunities.

4.2 Functional Requirements

1. The system will provide the capability to output for viewing, printing, searching and saving a log of each document received
2. The system will provide the capability to output for viewing, printing, searching and saving an error log of each non-compliant document
3. Document with viruses will be entered into the error log
4. The system will uniquely identify all incoming documents
5. The system will populate the Received Document Attribute Values upon receipt of a Document
6. The system will assign a File Classification to each document based on the Received Document File Classification
7. The system will virus check[5] every document within a Received Document
8. The system will assign a Virus Contamination Indicator that indicates the document was either “contaminated" or "not contaminated" in the ErrorLog
9. The system will remove all viruses from every document with a Virus Contamination Indicator of “contaminated”
10. The system will provide the capability to identify every document that failed the “remove viruses” activity
11. The system will stop the processing of a document of with a Virus Contamination Indicator equal to "contaminated" and is identified as failing the “remove viruses” activity and move the document into a controlled (quarantined) area.
12. The system will provide the capability to make available a Virus Indicator Contaminated Not Cleaned Notice for every document moved into the controlled (quarantined) area
13. The system will provide the capability to make available a Virus Indicator Contaminated Cleaned Notice for every document that has a “contaminated” Virus Contamination Indicator that includes the virus(es) removed including the name of the virus(es)
14. The system will make available for viewing, printing and saving all notices of the Check Document for Viruses Use Case
15. The system will handle all incoming documents at the level of system security accreditation
16. The system will handle the document in accordance with its assigned security classification level

[5] Use of a commercial virus detection software that is designed to detect and clean the object of the virus(s)

17. The system will ensure the authenticity of a document until it is made available as a Preserved Document
18. The system will provide the capability to find the unique words and unique acronyms within the Document
19. The system will provide the capability to find the positions of each word and acronym within the Document
20. The system will provide the capability to output for viewing printing and saving unique words and unique acronyms and their positions.
21. The system will provide the capability to compare security classification level markings of the document and assign the highest security classification level found to the Processed Document
22. The system will provide the capability to output for viewing, printing and saving a security classification level discrepancy notification when the Processed Document security classification level is different than the document security classification level
23. The system will provide the capability to "stop the processing of a document" when the identified Security Classification Level is higher than the System Accreditation level
24. The system will provide the capability to output for viewing, printing and saving a security system accreditation discrepancy notification when a "stop the processing of a document" occurs
25. The system will provide the capability to output for viewing, printing and saving matches between the document and the Privacy Act List
26. The system will provide the capability to output for viewing, printing and saving all terms that are not "stop words", not in the Thesaurus and not in Previous Thesaurus Candidate Term List
27. The system will populate the Document and Lifecycle Attribute Sets to each ReceivedDocument
28. The system will populate Agency Unique Attribute Sets when provided by the document sender to each Received Document
29. The system will provide the capability to output for viewing, printing and saving attribute values of the document
30. The system will provide the capability to output an Unpopulated Attribute Value Notice when the document does not contain a required Attribute value
31. The system will forward the Unpopulated Attribute Value Notice to an identified individual based upon the Unpopulated Attribute Value Notice Rule Set
32. The system will provide the capability to interrupt the processing of a set of Processed Documents based on any attribute value or presence of search terms prior to the Processed Document becoming a Preserved Document
33. The system will provide the capability to output for viewing Processed Document attributes <<Modifiable Processed Document Attribute List>> prior to the Processed Document becoming a Preserved Document
34. The system will provide the capability to modify attributes of the Modifiable Processed Document Attribute List during the "viewing all Processed Document attributes" activity
35. The system will provide the capability to output for viewing, printing and saving a Processed Document consisting of the document, its attribute values, and Privacy Act List matches

36. The system will ensure a complete and reliable Processed Document exists before it is made available as a Preserved Document
37. The system will ensure the authenticity of the Preserved Record until it is made available for disposition
38. The system will provide the capability to output for viewing, printing and saving a copy of the Preserved Record and all its components
39. The system will provide the capability to manage each Preserved Record in accordance with File Classification attribute
40. The system will provide the capability to associate the File Classification attribute with the File Classification Disposition Rule Set
41. The system will provide the capability to manage each Preserved Record with a unique identifier (First 5015.2 Generic Requirement)
42. The system will provide the capability to output for viewing, printing and saving Preserved Record Unique identifier report
43. The system will make available all attribute values, index terms and terms contained in the contents of the Preserved Record as "searchable" data of the Preserved Record
44. The system will provide the capability to view all Preserved Record attributes and modify those defined by the Modifiable Preserved Record Attribute List.
45. The system will provide the capability to modify attributes of the Modifiable Preserved Record Attribute List during the “viewing Preserved Record attributes activity
46. The system will provide the capability to make available a Dissemination Copy of a Preserved Record in a standard format upon demand
47. The system will provide the capability to redact attributes, words and phrases based on the Redacted Dissemination Copy Rule Set
48. The system will provide the capability to make an un-redacted Dissemination Copy available to an Authorized User
49. The system will provide the capability to output for viewing, printing and saving metrics of the Processed Document
50. The system will provide the capability to output for viewing, printing and saving the current activity of any and/or all document from when it is logged until it is set aside as a Preserved Record
51. The system shall provide notification if there are no documents meeting the requested status criteria.
52. The system will ensure that if document processing is interrupted the processing can be continued from the last completed activity
53. The system will provide the capability to search on the set of attributes for all documents regardless of the security classification level
54. The system will provide the capability to search populated Attribute Values on each document until it becomes a Preserved Record
55. The system will provide the capability to search on the content of a Processed Document and its components
56. The system shall provide notification if there are no documents meeting the requested search criteria.
57. The system will provide the capability to transfer/retire the electronic form of a Preserved Document with all its attributes

58. The system will provide the capability to output for viewing, printing and saving attributes of a Preserved Document for use in the Transfer Retire Report
59. The system will provide the capability to add to the Record History Log the returned information from the receiving Transfer Retire Agency

5 Entity classes

5.1 Overview

As noted in previous reports, an IDEF01x model was not constructed during prior workshops due to the planned migration to an object oriented methodology. Until the core future processes were established and stabilized, it would not have been an effective use of participant time to construct an IDEF0 focused data model.

However, once the use cases were developed, an OO structure was established to begin the process of the developing and defining an OO class diagram. During the Migration and OO Workshops, session participants identified an initial list of entity classes that are associated with each use case. An entity is an item of interest to the user of a system and there is a need to record data about it. Section 4.2 provides an initial list of entity classes that support the use cases developed. In some cases definitions were provided when time permitted. During future on site individual interview sessions, additional entity classes and a complete set of definitions will be developed.

Section 3 provides a graphical representation of the relations among the entity classes. For a quick primer on Class Diagrams see Appendix D, section D-2.

5.2 Initial List of Entity classes

Some entity classes are provided without a definition. Team members understood this would make them incomplete. Several members during non-session meeting time developed definitions and these were reviewed by the team and provided below. It was determined that effort should be first placed into defining the use cases and their respective functional requirements since these would provide the most use to any potential user. Definitions shall be included in future work as the use cases and functional requirements are reviewed and comments collected from within the DoD, other federal agencies, industry and academia.

Acronym
A non-blank string of only standard ASCII text that occurs as autonomous units within the text of a document.

Upper and lower case: A through Z
Characters: $ % ' - _ @ ~ ` ! { } ^ # $& + , ; = [ ]
Numbers: 0-9

ActivityLevelBackup
An internal object that retains an event-driven version of the products of the processing activity steps for the Received Document.

AgencyUniqueAttributeValueSet
The set of defined data presented by the sending organization that is requesting be associated with their document

DocumentSenderReceiptNotification
The document required by the sending organization that shows receipt

AttributeList

AttributeSearchQuery

AttributeQuery

AttributeSet
A set of attribute values that are populated and maintained with the Processed Document.

DisseminationCopy
A rendition of the Preserved Record in a specified presentation format created on-demand as a result of a Request for Information.

Document

DocumentAttributeSet

DocumentPrivacyActInstanceList
A list of zero or more words, acronyms or phrases from the Document that match the Privacy Act List

Error Log

Event
Occurrence of a reportable activity

LifeCycleAttributesSet

RecordsRepository
The repository for holding the Preserved Record

Metric
A generated value based on a system processing event

ModifiablePreservedRecordAttributeList

NonCompliantDocumentNotification

PredefinedAttributeMapping

PreservedRecord
The Processed Document that is set aside and managed and made available

PreviousThesaurusCandidateTermList

PrivacyActList
A list of character string patterns, which relate to potential Privacy Act information that may occur in the text portion of a Received Document.

ProcessedDocument
The aggregation of the Received Document, Attribute Set, Search Index and Privacy Act Instance List

ReceiptLog
A register of Received Documents.

ReceivedDocument
Documents received for processing that has met all of the preconditions of Process Document use case

RecordHistoryLog

RequestDisseminationCopy
A message requesting a Dissemination Copy of a Preserved Record

SearchIndex
A list of all words except stop-words or acronyms and their positions from the Received Document

SecurityClassificationLevelDiscrepancyNotification
A notification indicating that a higher security classification level was found in the Received Document than was indicated when the Received Document was logged.

Status
The reported state of a Processed Document

StopWordList
Words that occur frequently in almost every document that do not reveal information regarding the content of the text in a Received Document.

SystemAccreditationLevel

SystemMailbox
A mailbox for receiving DMS compliant messages

SystemSecurityViolationNotification

Thesaurus

ThesaurusTermList
A list of words, acronyms and phrases compiled from the Received Document that do not appear in the CALL Thesaurus.

TransferRetireReport

UniqueIdentifierReport

UnpopulatedAttributeValueNotice

UnpopulatedAttributeValueNoticeRuleSet

VirusIndicatorContaminatedNotice

Word
One or more characters together that provide a consistent meaning about a person, place or thing to someone with an understanding of the language used.

WorkInProgressRepository
The repository for holding the components of a Processed Document while it is being produced

5.3 Entity Class Diagrams

OO modeling is intended to provide different "views" of the system. This can include class diagrams. The list of entity classes identified during the OO session can best be understood when looked at in context. The following two diagrams exemplify this: The figure below represents a domain model for Process Document. A domain model depicts business entities, other significant entities (chosen subjectively) and the relationships between them.

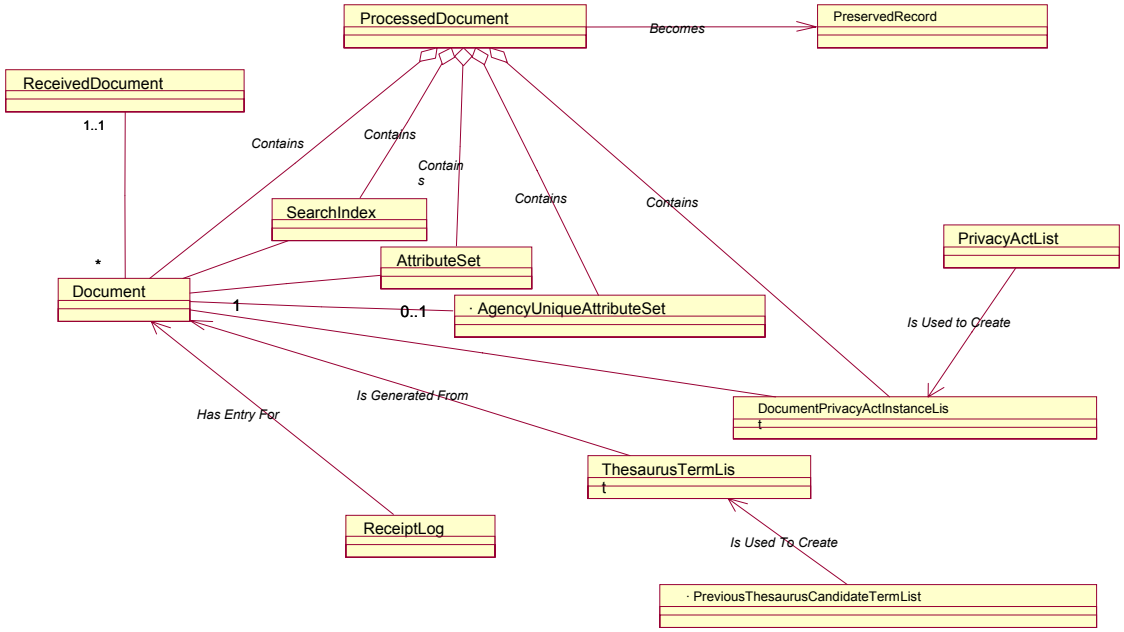

Figure 3. System class model for Process Document

Figure 3 represents a system class model for Process Document. The below figure shows the major system entity classes are shown along with their relationships to major business entities.

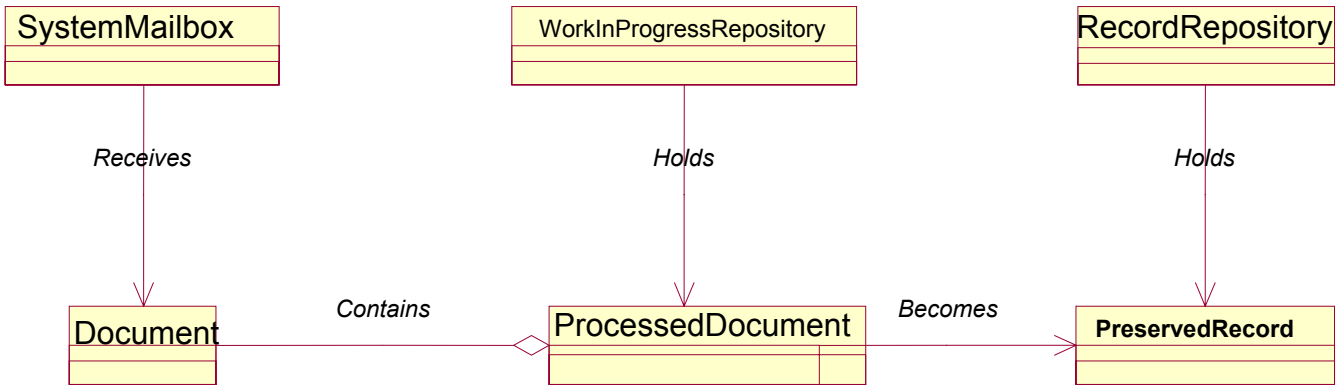

Figure 4. System entity classes for Process Document.

Appendix A – Workshop Participants

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Appendix B – CALL Mission Specific Use Cases

The following are Center for Army Lessons Learned (CALL) Functional and System use cases built upon the enterprise use cases found in Chapter 2 of the report "Functional System Use Cases for Records Management Application Environment, May 7, 2000. The information is presented in table format – the left column is the Process and System Enterprise Use Case from the original report and the right column represents the constraining down of the requirement to meet additional functionality required by the CALL.

The original models and requirements are provided in the DoD Information Technology Testbed OO Workshop Report, 8 – 11 February 2000. The original work by the DITT Core Team utilized the CALL mission to baseline a real world process. This was done in order to analyze and propose enterprise functional requirements and use cases that would be usable by any organization within the Department of Defense or by any Agency of the US Government.

The results of this work are provided in this section by giving the reader a side-by-side comparison of the originally modeled process against the finished use cases developed for the CALL. The reader should not the use of capitalization of words; these are indicators of possible entity classes that shall be considered as part of the system design.

1. Log Received Document Use Case

Purpose

This use case logs into the Receipt Log all documents that are received and logs into the Error Log all received documents that are not compliant.

This use case logs into the Receipt Log all documents that are received in a Received Acquisition and logs into the Error Log all received documents that are not compliant.

Functional Requirements

A. The system will provide the capability to output for viewing, printing, searching and saving a log of each document received	1. The system will provide the capability to output for viewing, printing, searching and saving a log of each document of a Received Acquisition
	2. The user interface will be Microsoft Internet Explorer 4.x
B. The system will provide the capability to output for viewing, printing, searching and saving an error log of each non-compliant document	1. The system will provide the capability to output for viewing, printing, searching and saving an error log of each non-compliant document of a Received Acquisition
C. Document with viruses will be entered into the error log	
D. The system will uniquely identify all incoming documents	1. The system will uniquely identify all incoming documents in a Received Acquisition
E. The system will populate the Received Document Attribute Values upon receipt of a Document	1. The system will populate the Received Acquisition Attribute Values upon receipt of a Received Acquisition
G. The system will assign a File Classification to each document based on the Received Document File Classification	1. The system will assign a File Classification to each document of the Received Acquisition based on the Received Acquisition File Classification
	2. The system will assign a Lifecycle File Classification to the document based on the File Classification Rule Set
	ADDITIONAL CALL REQUIREMENT 1. The system will set the document "File Room" attribute of each document of the Received Acquisition
	2. The system will make available a receipt notification when a Received Document is recognized by the system as being logged listing all the documents received
	3. The system will send the receipt notification to the acquisition sender

Actor

• Document Sender	• Acquisition Sender

Pre-conditions

• Received Document is in a System Mailbox[6]	• Received Acquisition is received in a System Mailbox
	• For the Phase 1 implementation the System Mailbox will be a queue of Received Acquisitions.
	• Agency unique attributes have been defined and mapped to respective attribute sets
• The object (document and associated attributes) format is known and it has been "mapped" to this process (mapped means that the system understands the format and can process it)	

Main Flow

1. Verify the format of each document is compliant[7]	a. Verify the format of each document in the Received Acquisition is compliant
	b. Compliance will mean that the documents within an Acquisition are an object that can be processed by the system and all its predefined components are present.
2. For each Received Document make an entry in the Receipt Log	a. For each Document of the Received Acquisition, make an entry in the Receipt Log
3. Store each Received Document in Work In Progress Repository	a. Store each document of the Received Acquisition in Work In Progress Repository
4. For each Received Document store a unique ID in the Document Attribute Set	a. For each Received Document of the Received Acquisition store a unique ID in the Document Attribute Set for the Document
5. Generate receipt notification to sender (contains # of documents received, # of non-compliances, # and type of viruses, # of documents to be processed)	
6. Populate the Document Attribute Set and Lifecycle Attribute Set of each document[8]	a. Populate the Document Attribute Set and Lifecycle Attribute Set of each Document with attribute values from the Received Acquisition
	b. Included are the File Room, Acquired From, Received Acquisition unique identifier

[6] The System Mailbox is the term identifying the space and/or place and is not a constraining design factor
[7] Compliance will mean that the document is an object that can be processed by the system and all its predefined components are present.
[8] These are created using the data from the document when the object is mapped for the system

	(system generated) etc.
7. Populate the predefined attribute values of each Document	a. Populate the predefined attribute values of each Document from the Received Acquisition
8. Perform Activity-level Backup	

Sub-flows - None

Alternative Flows

4. A Document is non-compliant
   - Reference the Document in the Error Log as non-compliant
   - Issue a Non Compliant Document Notification to the Acquisition Sender
5. Output Error Log
6. Output Receipt Log

Entity Classes

- AcquisitionSenderReceiptNotification
- AgencyUniqueAttributeValueSet
- Document
- DocumentAttributeSet
- ErrorLog
- LifecycleAttributeSet
- NonCompliantDocumentNotification
- PredefinedAttributeMapping
- ReceiptLog

• ReceivedDocument	• ReceivedAcquisition

- SystemMailbox
- WorkInProgressRepository

Glossary

• Received Document: Documents received by the organization that will be set aside as a record	• Received Acquisition: Documents received for processing into the VRL that have met all of the preconditions of Process Document Use Case. A single acquisition must contain at least one document but may contain a set of documents received as a group for processing and storage into the Knowledge Repository with common attribute values (e.g. Originating Organization, File Room, Acquired From, etc.)
• Document Sender: The entity who puts an Document in the system mailbox	• Acquisition Sender: The entity who puts an Acquisition in the system mailbox
• System Mailbox: The System Mailbox is a queue of Received Documents	• System Mailbox: The System Mailbox is a queue of Received Acquisitions

References:
ACP 123 – Common Messaging Strategy and Procedures

2. Check Document for Viruses Use Case

Purpose

This use case is to check a Document for viruses, attempt to clean the Document if it has viruses, and issue a Virus Indicator Contaminated Notice and stop processing of the Document if the Document has viruses that cannot be removed.

Functional Requirements

A. The system will virus check[9] every document within a Received Document	1. The system will virus check every document within a Received Acquisition
B. The system will assign a Virus Contamination Indicator that indicates the document was either “contaminated" or "not contaminated" in the Error Log	
C. The system will remove all viruses from every document with a Virus Contamination Indicator of “contaminated”	
D. The system will provide the capability to identify every document that failed the “remove viruses” activity	
E. The system will stop the processing of a document of with a Virus Contamination Indicator equal to "contaminated" and is identified as failing the “remove viruses” activity and move the document into a controlled (quarantined) area.	
F. The system will provide the capability to make available a Virus Indicator Contaminated Not Cleaned Notice for every document moved into the controlled (quarantined) area	1. The Virus Indicator Contaminated Not Cleaned Notice will be sent to the CALL Information System Security Officer
G. The system will provide the capability to make available a Virus Indicator Contaminated Cleaned Notice for every document that has a “contaminated” Virus Contamination Indicator that includes the virus(s) removed including the name of the virus(s)	1. The Virus Indicator Contaminated Cleaned Notice to the CALL Records Manager
H. The system will make available for viewing, printing and saving all notices of the Check Document for Viruses Use Case	

[9] Use of a commercial virus detection software that is designed to detect and clean the object of the virus(s)

Actor

- Information System Security Officer
- Records Manager

Pre-condition

A Received Document is available in System Mailbox	A Received Acquisition is available in System Mailbox

Main Flow

3. Scan document for virus
4. Set Virus Contamination Indicator to “not contaminated”

Sub-flows - None

Alternative Flows

1. Virus found in Document
    - Set Virus Contamination Indicator to “contaminated”
    - Set the document away from documents to be processed
    - Make available Virus Indicator Contaminated Notice
    - Stop processing of the Document

Entity Classes

- Document

• ReceivedDocument	• ReceivedAcquisition

- SystemMailbox
- VirusIndicatorContaminatedNotice

Glossary - None

References - None

3. Process Document Use Case

Purpose

Ensure that a Received Document becomes an authentic record in a reliable environment	Add value to a Received Acquisition for inclusion in a lifecycle repository this includes attribute creation and augmentation, security classification verification, preservation

Functional Requirements

A. The system will handle all incoming documents at the level of system security accreditation
B. The system will handle the document in accordance with its assigned security classification level
C. The system will ensure the authenticity of a document until it is made available as a Preserved Document

Actors

- Security Officer (through Verify and Set the Security Classification use case)
- Records Management Specialist (through Set Attributes use case)
- Lexicographer (through Identify Prospective Thesaurus Terms use case)
- Archive Technician (through Set Attributes use case)
- Thesaurus (through Identify Prospective Thesaurus Terms)

Pre-conditions

1. The document is logged
2. The document is in the Work In Progress Repository
3. The mapping of Document attributes to Preserved Document attributes has been defined
4. The document has been virus checked

Main Flow

1. Build Search Index
2. Verify and Set the Security Classification Attribute
3. Locate Privacy Act Information
4. Identify Prospective Thesaurus Terms
5. Set attributes
6. Set aside preservable Document

Sub-flows - None

Alternative Flows - None

Glossary

- System Security Accreditation: The certification level that designates the material that can be processed and managed by the system.
- Security Classification Level: The highest security classification level of the document
- Thesaurus: Rule set of terms and words

- Search Index: Terms and words identified within the document
- Privacy Act: Public Law – Privacy act of 1974 and as amended

References

- DoD STD 5015.2
- This is an excerpt from the emerging security classification/declassification portion being added to the DoD STD 5015.2.

C4.1.22. Record History. The RMA shall provide a capability to provide a history of each record by tracking changes to the following metadata items and appending them to a record history file [EO 12958, Sections 3.4, 3.5, and 3.6, 32 CFR 2001.21, Section (d), references (pp) and (tt)]:

C4.1.22.1. Current Classification.
C4.1.22.2. Reviewed On.
C4.1.22.3. Reviewed By.
C4.1.22.4. Downgraded On.
C4.1.22.5. Downgraded By.
C4.1.22.6. Declassified On.
C4.1.22.7. Declassified By.
C4.1.22.8. Upgraded On.
C4.1.22.9. Upgrade Authority.
C4.1.22.10. Declassify On.
C4.1.22.11. Originating Organization.

C4.1.23. Displaying Current Metadata. The RMA shall display only current metadata information; however, the user will be allowed to view the historic metadata information, if requested.

C4.1.24. Classifying Metadata Fields. RMAs shall provide a capability whereby selected metadata fields may be classified. Authorized individuals shall have the ability to specify which metadata fields require classification for a given organization.

4. Build Search Index Use Case

Purpose

This use case supports Locate Privacy Act Information, Identify Prospective Thesaurus Terms and Search Processed Document use cases.

Functional Requirements

A. The system will provide the capability to find the unique words and unique acronyms within the Document
B. The system will provide the capability to find the positions of each word and acronym within the Document
C. The system will provide the capability to output for viewing printing and saving unique words and unique acronyms and their positions.

Actors - None

Pre-condition

- A Document is available in Work In Progress Repository

Main Flow

1. Extract non-stop words and acronyms
2. Sort words and acronyms in the document
3. Link words in index to locations of their occurrences in the document
4. Perform Activity-level Backup

Sub-flows - None

Alternative Flows - None

Entity Classes

- Acronyms
- Document
- SearchIndex
- Word
- WorkInProgressRepository

Glossary

- Stop Word: Repeating words such as articles that have been determined to be of little significance (e.g. the, a, of)

References - None

5. Verify and Set the Security Classification Attribute Use Case

Purpose

This use case determines the proper security level classification for a Document based on the security level markings in the Document and issues notifications if either the proper security level classification is different from that provided the Document or exceeds the System Accreditation Level.

Functional Requirements

E. The system will provide the capability to compare security classification level markings of the document and assign the highest security classification level found to the Processed Document
F. The system will provide the capability to output for viewing, printing and saving a security classification level discrepancy notification when the Processed Document security classification level is different than the document security classification level
G. The system will provide the capability to "stop the processing of a document" when the identified Security Classification Level is higher than the System Accreditation level
H. The system will provide the capability to output for viewing, printing and saving a security system accreditation discrepancy notification when a "stop the processing of a document" occurs

Actor

- Information System Security Officer

Pre-condition

- Locations for security classification markings defined for formats of the Document

Main Flow

1. Identify locations for security classification markings in the Document
2. Inspect security classification marking locations to determine the highest security classification marking level for the Document
3. Verify the highest security classification marking level matches the level specified for the Document
4. Verify the highest security classification marking level matches or is less than the System Accreditation Level
5. Perform Activity-level Backup

Sub-flows - None

Alternative Flows

1. Document is marked "Secret for Training Purposes Only"
2. The highest security classification marking level matches the level specified for the document
   - Make available Security Classification Level Discrepancy Notification
   - Set the security level attribute for the Document to be that of the highest security classification marking level
3. The highest security classification marking level exceeds the System Accreditation Level

- Stop the processing of the Document
- Make available System Security Violation Notification

Entity classes
- Document
- SecurityClassificationLevelDiscrepancyNotification
- SystemAccreditationLevel
- SystemSecurityViolationNotification

Glossary
- Security Classification Level: The security classification assigned to the document
- Security Classification Marking: The indicia on or within the document that identifies security classification
- System Accreditation Level: The certification level that designates the material that can be processed and managed by the system

References - None

6. Locate Privacy Act Information Use Case

Purpose

This use case identifies the instances of Privacy Act information and their locations in a Document.

Functional Requirements

B. The system will provide the capability to output for viewing, printing and saving matches between the document and the Privacy Act List

Actors - None

Pre-conditions

- The Search Index for the Document is available

Main Flow

1. Find matches in the Search Index with expressions in the Privacy Act List
2. Extract locations of matches
3. Build a Document Privacy Act Instance List
4. Perform Activity-level Backup

Sub-flows - None

Alternative Flows - None

Entity classes

- DocumentPrivacyActInstanceList
- PrivacyActList
- SearchIndex

Glossary

- Privacy Act: Public Law – The Privacy Act of 1974 and as amended
- **Privacy Act Instances: Identified privacy act matches in the document**

References - None

7. Identify Prospective Thesaurus Terms Use Case

Purpose

This use case identifies terms from a Document that are not stop words, not in the Thesaurus, and not in the Previous Thesaurus Candidate Term List.

Functional Requirements

B. The system will provide the capability to output for viewing, printing and saving all terms that are not "stop words", not in the Thesaurus and not in Previous Thesaurus Candidate Term List

Actors

- Lexicographer
- Thesaurus

Pre-condition

- The Search Index for the Document, Thesaurus, and Previous Thesaurus Candidate Term List are available

Main Flow

1. Identify terms in the Search Index that are not in Thesaurus
2. Identify non-Thesaurus terms that are not in the Previous Thesaurus Candidate Term List
3. Update Thesaurus Term List
4. Make available Thesaurus Term List
5. Perform Activity-level Backup

Sub-flows - None

Alternative Flows - None

Entity classes

- PreviousThesaurusCandidateTermList
- SearchIndex
- Thesaurus
- ThesaurusTermList

- Stop Word: Identified set of words having little significance (e.g. the, a, of)
- Term: A single word or acronym or phrase
- Thesaurus: A list of words, acronyms and phrases
- Previous Thesaurus Candidate Term List: A list of previously submitted words that have been determined not to be part of the Thesaurus

References - None

8. Set Attributes Use Case

Purpose

This use case populates the Document, Lifecycle and Agency Unique Attribute Sets with values contained in the Document, issues notifications for required attribute values that have not yet been provided for the Document, and enables to viewing of attribute values after all of the required attribute values have been provided.

Functional Requirements

A. The system will populate the Document and Lifecycle Attribute Sets to each Received Document	1. The system will populate the Document and Lifecycle Attribute Sets to each document of the Received Acquisition
B. The system will populate Agency Unique Attribute Sets when provided by the document sender to each Received Document	1. The system will populate Agency Unique Attribute Sets when provided by the acquisition sender to each document of the Received Acquisition
C. The system will provide the capability to output for viewing, printing and saving attribute values of the document	
D. The system will provide the capability to output an Unpopulated Attribute Value Notice when the document does not contain a required Attribute value	
E. The system will forward the Unpopulated Attribute Value Notice to an identified individual based upon the Unpopulated Attribute Value Notice Rule Set	
F. The system will provide the capability to interrupt the processing of a set of Processed Documents based on any attribute value or presence of search terms prior to the Processed Document becoming a Preserved Document	
G. The system will provide the capability to output for viewing Processed Document attributes <<Modifiable Processed Document Attribute List>> prior to the Processed Document becoming a Preserved Document	
H. The system will provide the capability to modify attributes of the Modifiable Processed Document Attribute List during the "viewing all Processed Document attributes" activity	1. The system will provide the capability to expand attribute fields within the Attribute Set by a user interface
	2. The system will provide the capability to manage additional attribute fields within the

	Attribute Set without affecting previously process documents

Actors
- Records Management Specialist
- Archive Technician

Pre-conditions
- A document is available in Work In Progress Repository
- Attribute Required values are identified

Main Flow
1. Extract Document, Lifecycle and Agency Unique Attribute values from document
2. Check for all required attribute values
3. Make available attribute values
4. Perform Activity-level Backup

Sub-flows - None

Alternative Flows
2. Unpopulated Attribute values exist
    - Send Unpopulated Attribute Value Notice
    - Accept attribute values from an interactive session

Entity classes
- AgencyUniqueAttributeSet
- AttributeSet
- Document
- UnpopulatedAttributeValueNotice
- UnpopulatedAttributeValueNoticeRuleSet
- WorkInProgressRepository

Glossary

• Agency Unique Attribute – attribute values provided by the document sender	• Agency Unique Attribute – attribute values provided by the acquisition sender

References
- Core DB Metadata definition

9. Set Aside the Preserved Document Use Case

Purpose

This use case verifies that a Processed Document is reliable and complete and moves the Processed Document into a certified records management environment	This use case verifies that a Processed Document is reliable and complete and moves a complete and reliable Processed Document into the Knowledge Repository.

Functional Requirements

1. The system will provide the capability to output for viewing, printing and saving a Processed Document consisting of the document, its attribute values, and Privacy Act List matches
2. The system will ensure a complete and reliable Processed Document exists before it is made available as a Preserved Document

Actors - None

Pre-condition

- All Processed Document components are complete and exist in the Work In Progress Repository

Main Flow

1. Verify completeness of Processed Document
2. Move the Processed Document to a Lifecycle Repository
3. Verify Preserved Document is complete in the Lifecycle Repository
4. Destroy back-up copy

Sub-flows - None

Alternative Flows

1. Processed Document not complete
2. Determine missing component
3. Restore component from back-up copy

Entity classes

- ActivityLevelBackup
- AttributeSet
- Document
- DocumentPrivacyActInstanceList
- LifecycleRepository
- ProcessedDocument
- WorkInProgressRepository

Glossary - None

References - None

10. Manage Preserved Record Use Case

Purpose

This use case ensure the authenticity of a Preserved Record until its disposition, manage the disposition of a Preserved Record according to the value of its File Classification attribute, and make the components of a Preserved Record available for viewing, printing, and saving.

Functional Requirements

A. The system will ensure the authenticity of the Preserved Record until it is made available for disposition	
B. The system will provide the capability to output for viewing, printing and saving a copy of the Preserved Record and all its components	
C. The system will provide the capability to manage each Preserved Record in accordance with File Classification attribute	1. CALL to provide specific attribute values for File Classification.
D. The system will provide the capability to associate the File Classification attribute with the File Classification Disposition Rule Set	
E. The system will provide the capability to manage each Preserved Record with a unique identifier (First 5015.2 Generic Requirement)	1. CALL will provide a format.
F. The system will provide the capability to output for viewing, printing and saving Preserved Record Unique identifier report	1. CALL will provide report format and data required.
G. The system will make available all attribute values, index terms and terms contained in the contents of the Preserved Record as "searchable" data of the Preserved Record	
H. The system will provide the capability to view all Preserved Record attributes and modify those defined by the Modifiable Preserved Record Attribute List.	1. CALL Unique Identifier Report is the only attribute that is not to be modified in the Preserved Record
I. The system will provide the capability to modify attributes of the Modifiable Preserved Record Attribute List during the “viewing	1. This includes modifiability of the Agency Unique Attribute Values

Preserved Record attributes activity	

Actors
- Records Management Specialist
- Historian Archivist

Pre-condition

• Preserved Record is stored in a certified records management environment	• Preserved Record is stored in the Knowledge Repository

Main Flow

1. Determine Preserved Record disposition based on file Classification	
2. Maintain Preserved Record as provided according to disposition	
3. Make notification of pending Preserved Record disposition	Notify Records Management Specialist of pending Preserved Record disposition

Sub-flows - None

Alternative Flows

1. Make available values in the Agency Unique Attribute Value Set	
2. Make available attributes in the Modifiable Preserved Record Attribute List	
3. Modify attributes in the Modifiable Preserved Record Attribute List	
4. Make available a copy of the Preserved Record	
5. Make available a Unique Identifier Report for the certified records management environment	Make available a Unique Identifier Report for the Knowledge Repository
6. Search Preserved Record attributes	

Entity classes
- AgencyUniqueAttributeValueSet
- KnowledgeRepository
- ModifiablePreservedRecordAttributeList
- PreservedRecord
- UniqueIdentifierReport

Glossary - None

References
- DOD 5015.2-STD

11. Generate Dissemination Copy Use Case

Purpose

This use case makes available a Dissemination Copy of a Preserved Record.

Functional Requirement

B. The system will provide the capability to make available a Dissemination Copy of a Preserved Record in a standard format upon demand	1. CALL standard format will be HTML
C. The system will provide the capability to redact attributes, words and phrases based on the Redacted Dissemination Copy Rule Set	
D. The system will provide the capability to make an un-redacted Dissemination Copy available to an Authorized User	

Actor

- Authorized User

Pre-conditions

- A Request Dissemination Copy is received
- The requested Preserved Document is in the Knowledge Repository
- Redaction rule set defined

Main Flow

1. Create a Dissemination Copy from the Preserved Document
2. Make available the Dissemination Copy

Sub-flows - None

Alternative Flows

1. Referenced Preserved Document not available
2. Unable to generate Dissemination Copy
3. Provide unredacted Dissemination Copy to Authorized User

Entity classes

- DisseminationCopy
- KnowledgeRepository
- PreservedRecord
- RedactedDisseminationCopyRuleSet
- RequestDisseminationCopy

Glossary

- Authorized User: Person or personality recognized through access protocols who can utilize the system
- Dissemination Copy: The facsimile of the Preserved Record that is used in response to a request

References - None

12. Provide Metric Use Case

Purpose

This use case provides a Metrics Report regarding the activities involved with the handling of Processed Documents.

Functional Requirement

A. The system will provide the capability to output for viewing, printing and saving metrics of the Processed Document

Actor

- Authorized User

Pre-condition

- Document has been logged.
- Metric events have been identified
- Document has not been set aside as a Preserved Record

Main Flow

1. Capture events
2. Process event
3. Make metric available

Sub-flows - None

Alternative Flows - None

Entity classes

- Event
- Metric

Glossary - None

References - None

13. Provide Status Use Case

Purpose

This use case provides a Status Report on the processing activity of a Received Document	This use case provides a Status Report on the processing activity of a Document in a Received Acquisition.

Functional Requirements

A. The system will provide the capability to output for viewing, printing and saving the current activity of any and/or all document from when it is logged until it is set aside as a Preserved Record
B. The system shall provide notification if there are no documents meeting the requested status criteria.

Actor

- Authorized User

Pre-condition

• A Received Document has been received	• A Received Acquisition has been received
• A Received Document has not been set aside as a Preserved Record	

•

Main Flow

1. Set Document status based on the current activity
2. Make status available

Sub-flows - None

Alternative Flows - None

Entity classes

• Document Repository	• Knowledge Repository

- ProcessedDocument
- Status
- SystemMailbox
- WorkInProgressRepository

Glossary - None

References - None

14. Perform Activity-level Backup Use Case

Purpose

This use case backs up a Processed Document by saving the results from processing of the Processed Document for the last activity completed.

Functional Requirements

A. The system will ensure that if document processing is interrupted the processing can be continued from the last completed activity	1. CALL parameters - attempt 3 retries, then abandon with a notification

-

Actor - None

Pre-condition

- A Document has been logged in
- A Document has not been set aside as a Preserved Record

Main Flow

1. Create activity product backup
2. Store new activity product backup
3. Verify prior activity product backups

Sub-flows - None

Alternative Flow

1. Prior Activity Product Backup is corrupt
   - Regenerate backup

Entity classes

- ActivityLevelBackup
- AttributeList
- DocumentPrivacyActInstanceList
- ProcessedDocument

• ReceivedDocument	• Received Acquisition

- SearchIndex

Glossary - None

References - None

15. Search Processed Document Use Case

Purpose

This use case provides the capability of searching on the attributes and contents of a Processed Document.

Functional Requirements

A. The system will provide the capability to search on the set of attributes for all documents regardless of the security classification level	1. This requirement only applies to searching unclassified attributes
B. The system will provide the capability to search populated Attribute Values on each document until it becomes a Preserved Record	
C. The system will provide the capability to search on the content of a Processed Document and its components	
D. The system shall provide notification if there are no documents meeting the requested search criteria.	

Actor

A. Authorized User

Pre-condition

- Authorized user is making the search query request
- Attributes for the Processed Documents are available.
- A Document has been logged in
- A Document has not been set aside as a Preserved Record

Main Flow

1. Accept Search Query.
2. Return the results of the Search Query.

Sub-flows - None

Alternative Flows - None

Entity classes

- AgencyUniqueAttributeSet
- Attribute Search Query
- AttributeSet
- ProcessedDocument

Glossary - None

References - None

16. Transfer or Retire a Preserved Record Use Case

Purpose

This use case takes the appropriate steps to transfer or retire a Preserved Document when identified by its disposition schedule.

Functional Requirements

B. The system will provide the capability to transfer/retire the electronic form of a Preserved Document with all its attributes	
C. The system will provide the capability to output for viewing, printing and saving attributes of a Preserved Document for use in the Transfer Retire Report	*CALL to define data for the Transfer Retire Report*
D. The system will provide the capability to add to the Record History Log the returned information from the receiving Transfer Retire Agency	

Actor

- Records Management Specialist

Pre-condition

• A Preserved Record in the records has been identified for transfer or retirement.	• A Preserved Record in the Knowledge Repository has been identified for transfer or retirement.
• Disposition schedule is available	

Main Flow

1. Disposition Schedule identified a Record for transfer or retirement
2. Make available Transfer Retire Report
3. Make available Record for transfer or retirement
4. Create Record History Log entry for transferred or retired Document

Sub-flows - None

Alternative Flows

1. Data returned from receiving Transfer Retire Agency
   - Update Record History Log entry for Record

Entity classes

- DispositionSchedule
- Record
- RecordHistoryLog

• RecordsRepository	• KnowledgeRepository

- TransferRetireReport

Glossary

- Transfer Retire Agency: Organization receiving transferred records
- Transfer Retire Report: The document detailing records sent and received by the sending and receiving organizations
- Record History Log: Register of record transfer information

References - None

Appendix C – Functional Requirements to Use Case Matrix

The following is the result of the prioritization of the initial set of functional requirements developed at the OO Workshop. It does not include the additions and changes made during the follow on session on 12 April 2000. The scale use by each participant to rank the functional requirements was *High/Medium/Low*. Where:

High = Required in Phase 1 implementation; *Medium* = Desired in Phase 1 implementation; *Low* = Can wait till later implementation

The 'Numerical Priority' is derived from H=10, M=5, L=1. A "?" denotes a note from the respondent rather than a numerical rating.

IDEF0 TO-BE Model Activities	Improvement Opportunities	Proposed FunctionalRequirement for Use Case	Requirement Priority	Numerical Priority	Use Cases
A41 PROCESS ACQUISITION	Determine an efficient process to handle and process all incoming documents/records on one system (Secret) and output the Unclassified metadata and documents/records to the Unclassified CALL DB.	The system will handle all incoming documents at the level of system security accreditation.	M-H-H-H-H-H	9	Process Document
		The system will provide the capability to search on The Set of attributes (only unclassified) for all documents regardless of the security classification level.	H-H-H-H-H-H	10	Search Processed Document
		The system will handle the document in accordance with its assigned CALL security classification level.	M-M-H-H-M-H	7.5	Process Document
		A system that seamlessly moves a document and its associated attributes along a predetermined flow.	H-H-H-H-H-H	10	Process Document

IDEF0 TO-BE Model Activities	Improvement Opportunities	Proposed FunctionalRequirement for Use Case	Requirement Priority	Numerical Priority	Use Cases
A413 PROCESS DOCUMENT / RECORD	Enhance the acquisition process so that we can handle any acquisition in an electronic environment	The system will ensure that if document processing is interrupted the processing can be continued from the last completed activity	H-H-H-H-H-H	10	Perform Activity-level Backup
	Provide auto-feedback to CALL RD regarding the number of documents uploaded	The system will provide the capability to output for viewing, printing and saving			Provide Status

IDEF0 TO-BE Model Activities	Improvement Opportunities	Proposed FunctionalRequirement for Use Case	Requirement Priority	Numerical Priority	Use Cases
	Provide backups during the processing of records Implement supporting technology. Document management system, workflow system for routing and gather metrics, develop reports Capture correction activity as an automated report process Note: consider for future requirement Integrated thesaurus capability	status of the Received Acquisition. The system will provide the capability to output terms for viewing, printing and saving a CALL Thesaurus Not Stop Word Filter The system will provide the capability to output for v-p-s all terms that are not "stop words", not in the CALL Thesaurus and not in the CALL Thesaurus Not Stop Word Filter	H-H-H-H-M-H L-L-H-M-L-M M-L-H-M-L-M	9 3.6 4.5	 Identify Prospective CALL Thesaurus Terms Identify Prospective CALL Thesaurus Terms
A4131 REVIEW DOCUMENT	Automate the searching of pure electronic documents for classification markings Automated review of classified documents to identify sensitive information Note: File room (must have a populated value), file cabinet, file drawer, file folder, document historically significant Note: All documents in the Received Acquisition	The system will provide the capability to compare security classification level markings of the document and assign the highest security classification level found to the Processed Document The system will provide the capability to output for viewing, printing and saving a security classification level discrepancy notification when the Processed Document security classification level is different than the document security classification level The system will provide the capability to stop the processing of a document when the identified CALL Security Classification Level is higher than the System Accreditation level The system will provide the capability to output for viewing, printing and saving matches between the document and the CALL Privacy Act List	M-M-H-H-M-H M-M-H-M-L-M M-M-H-H-H-H L-L-H-M-M-M	7.5 5.2 8 4.5	Verify and Set the CALL Security Classification Attribute Verify and Set the CALL Security Classification Attribute Verify and Set the CALL Security Classification Attribute Locate Privacy Act Information
A4133 ADD METADATA	Allow for the augmentation of metadata for lifecycle management purposes Capture system-generated metadata	The system will provide the capability to output for viewing, printing and saving CALL attribute values of the document The system will provide the capability to	H-H-H-H-H-H	10	Set CALL Attributes Identify Prospective

IDEF0 TO-BE Model Activities	Improvement Opportunities	Proposed FunctionalRequirement for Use Case	Requirement Priority	Numerical Priority	Use Cases
	and auto-populate core CALL DB metadata elements Additional metadata to aid in document search and retrieval Automate a workflow process that will provide CALL DB Lexicographer with new terms eeded for CALL Thesaurus	output for viewing, printing and saving all terms that are not "stop words" of document not in the CALL Thesaurus The system will provide the capability to modify attributes of the CALL Modifiable Processed Document Attribute List during the "viewing all Processed Document attributes" activity. The system will provide an additional 25 256k generically identified attribute fields within the CALL Attribute Set	L-L-H-?-L-? H-H-H-H-H-H H-H-M-M-H-L	3.25 10 7	CALL Thesaurus terms Set CALL Attributes Set CALL Attributes
A4136 SEND DOCUMENT / RECORD TO PRESERVATION REPOSITORY		The system will provide the capability to output for viewing, printing and saving a Processed Document consisting of the document and its attribute values, search index and CALL Privacy Act List matches The system will ensure a complete and reliable Processed Document exists before it is made available as a Preserved Document The Received Acquisition must have "File Room" attribute before becoming a Preserved Document (Note: required attribute within the CALLAttributeSet) The system will provide the capability to output for viewing Processed Document attributes << CALL Modifiable Processed Document Attribute List>> prior to the Processed Document becoming a Preserved Document	H-H-H-H-H-H H-H-H-H-H-H H-H-H-H-H-H H-H-H-H-M-?	10 10 10 9	Set Aside the Preserved Document Set Aside the Preserved Document Set Aside the Preserved Document Set Aside the Preserved Document

IDEF0 TO-BE Model Activities	Improvement Opportunities	Proposed FunctionalRequirement for Use Case	Requirement Priority	Numerical Priority	Use Cases
A414 PRESERVE DOCUMENT / RECORD	Desk-side upload feature Note: doesn't apply to the DMS format	The system will ensure a complete and reliable Processed Document exists before it is made available as a Preserved Document	H-M-H-H-H-H	9	Set Aside the Preserved Document
A412 RECEIVE DOCUMENT / RECORD	Capability to search automated indexes for work in progress	The system will provide the capability to search populated CALL Attribute Values on the Received Acquisition while the Received Acquisition in being processed until it becomes a Preserved Document	H-H-H-M-M-H	8	Search Processed Document
		The system will provide the capability to search on The Set of attributes (only unclassified) for all documents regardless of the security classification level.	H-H-H-H-H-?	10	Search Processed Document
	Automated checks prior to upload	The system will provide the capability to output an Unpopulated CALL Attribute Value Notice when the document does not contain a required CALL Attribute value	H-H-H-H-H-H	10	Set CALL Attributes
		The system will provide an additional 25 256k generically identified attribute fields within the CALL Attribute Set	H-H-M-H-H-L	7.5	Set CALL Attributes
		The system will provide the capability to receive agency unique attribute sets.	H-H-M-H-H-H	9	Set CALL Attributes
		The system will populate the Agency Unique Attribute Set to each document of the Received Acquisition	H-H-M-H-H-H	9	Set CALL Attributes
A4121 REGISTER ACQUISITION		The system will provide the capability to output for viewing, printing, searching and saving a log of each document of the Received Acquisitions	H-H-H-H-H-H	10	Log Received Acquisition
		The system will provide the capability to output for viewing, printing, searching and saving an error log of each non-compliant document of the Received Acquisitions	H-H-H-?-H-H	10	Log Received Acquisition
		The system will uniquely identify all			

IDEF0 TO-BE Model Activities	Improvement Opportunities	Proposed FunctionalRequirement for Use Case	Requirement Priority	Numerical Priority	Use Cases
		incoming documents as a Received Acquisition	H-H-H-H-H-H	10	Log Received Acquisition
		The system will populate the Received Acquisition Attribute Values upon receipt of a Received Acquisition	H-H-H-H-H-H	10	Log Received Acquisition
		The system will provide the capability to output for viewing, printing and saving metrics of the Processed Document.	M-L-H-H-M-H	7	Provide Metric
		The system will forward the Unpopulated CALL Attribute Value Notice to an identified individual based upon the Unpopulated CALL Attribute Value Notice Rule Set	H-H-H-M-M-H	8	Set CALL Attributes
A4122 PERFORM VIRUS CHECK		The system will "virus check" every document within a Received Acquisition	H-H-H-H-H-H	10	Check Document for Viruses
		The system will assign a CALL Virus Contamination Indicator (ONLY "contaminated" "not contaminated") to each document of the Received Acquisition	H-H-H-M-H-M	8	Check Document for Viruses
		The system will stop the processing of a document of the Received Acquisition that has a CALL Virus Contamination Indicator equal to "contaminated"	H-H-H-H-H-H	10	Check Document for Viruses
		The system will provide the capability to output a CALL Virus Indicator Contaminated Notice for viewing, printing and saving when a document of the Received Acquisition has a CALL Virus Contamination Indicator equal to "contaminated"	H-H-H-H-M-H	9	Check Document for Viruses
A4124 APPEND RECORDS MANAGEMENT METADATA		The system will assign CALL File Classification to the Received Acquisition based on a CALL File Classification Rule Set	H-H-H-H-H-H	10	Set CALL Attributes

IDEF0 TO-BE Model Activities	Improvement Opportunities	Proposed FunctionalRequirement for Use Case	Requirement Priority	Numerical Priority	Use Cases
A416 TRANSFER / RETIRE RECORD		The system will provide the capability to transfer/retire a document of the Received Acquisition with its CALL Transfer Retire attributes	M-L-L-H-H-H	6	Transfer and Retire a Preserved Document
		The system will provide the capability to output for viewing, printing and saving attributes of the Preserved Document for use in the Transfer Retire Report	M-L-L-H-M-H	5.3	Transfer and Retire a Preserved Document
		The system will provide the capability to output for viewing, printing and saving attributes of a document of a Received Acquisition for use in the Transfer Retire Report	M-L-L-M-L-M	3	Transfer and Retire a Preserved Document
		The system will provide the capability to add to the Record History Log the returned data from the receiving Transfer Retire Agency	M-L-L-H-L-H	4.5	Transfer and Retire a Preserved Document
A415 MANAGE REPOSITORY	Have acquisitions automatically pushed from short term to long-term repository based upon a rule set	The system will ensure the authenticity of the Preserved Document until it is made available for disposition	H-H-M-H-H-H	9	Manage Preserved Document
	Ensure most recent and requested document/records are on-line by moving old and infrequently accessed documents/records to reside on near-line and off-line storage media Note: this applies to the Enhance VRL activity	The system will provide the capability to output for viewing, printing and saving a copy of the Preserved Document	H-H-M-L-H-L	6	Manage Preserved Document
		The system will provide the capability to output for viewing <<CALL Modifiable Preserved Document Attribute List>> Preserved Document attributes	H-H-M-M-M-M	6.5	Manage Preserved Document
	Advanced hierarchical storage system Note: this applies to the Enhance VRL activity	The system will provide the capability to make available a Dissemination Copy of a Preserved Document in HTML format upon demand	M-M-L-H-M-H	6	Generate Dissemination Copy
	Manage documents/records with RMA	The system will provide the capability to manage each Preserved Document in accordance with CALL File Classification	H-H-L-H-H-H	8.5	Manage Preserved Document

IDEF0 TO-BE Model Activities	Improvement Opportunities	Proposed FunctionalRequirement for Use Case	Requirement Priority	Numerical Priority	Use Cases
		attribute.			
		The system will populate the Agency Unique Attribute Set to each document of the Received Acquisition	H-H-M-?-H-H	9	Receive Agency-Unique Attributes
		The system will provide the capability to receive, process and manage agency-unique attribute sets.	H-H-M-?-M-H	8	Receive Agency-Unique Attributes
		The system will provide the capability to associate the CALL File Classification attribute with the CALL File Classification Disposition Rule Set	H-H-M-H-H-H	9	Manage Preserved Document
		The system will provide the capability to manage each Preserved Document with a unique identifier (First 5015.2 Generic Requirement).	H-H-M-H-H-H	9	Manage Preserved Document
		The system will provide the capability to output for viewing, printing and saving Preserved Document Unique identifier report = URI	H-H-M-M-M-M	6.5	Manage Preserved Document
		The system will provide the capability to output for viewing, printing and saving Agency Unique Attribute words within the Processed Document Note: Unique Agency Attribute set are not required attributes of the Preserved Document	H-H-M-L-M-M	6	Manage Preserved Document Set Aside the Preserved Document
		The system will make available the Unique Agency Attribute set for "searching" as part of the "searchable" data set of the Preserved Document.	H-H-M-M-L-M	6	Manage Preserved Document
		The system will provide the capability to modify attributes of the CALL Modifiable Preserved Document Attribute List during the "viewing Preserved Document attributes		6	Manage Preserved Document

IDEF0 TO-BE Model Activities	Improvement Opportunities	Proposed FunctionalRequirement for Use Case	Requirement Priority	Numerical Priority	Use Cases
		activity	H-H-M-L-M-M		

Appendix D – How to Read a Use Case and Entity Class Diagram

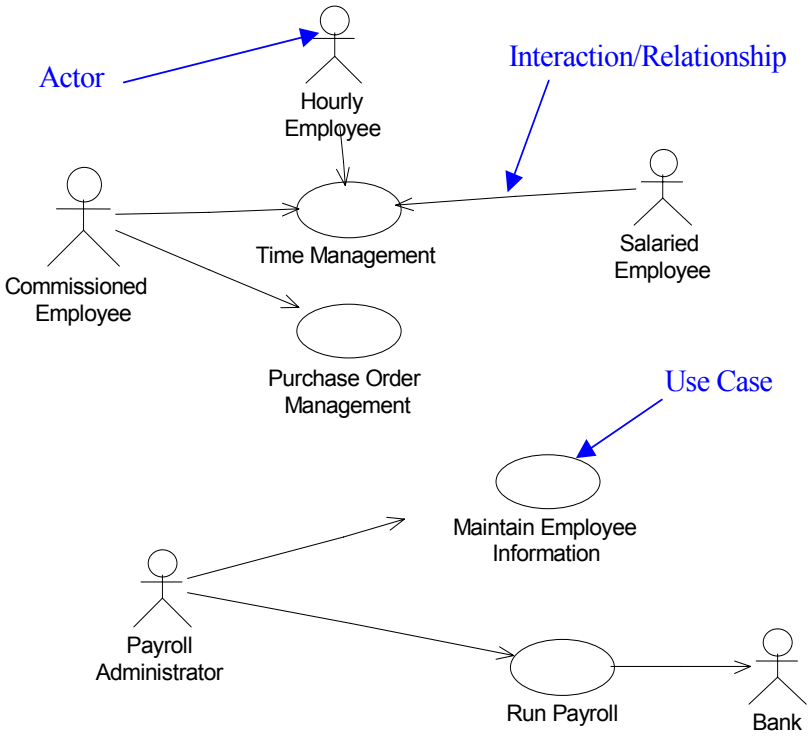
D-1 Use-Case Diagrams

Use-case diagrams graphically depict system behavior (use cases). These diagrams present a high level view of how the system is used as viewed from an outsider's (actor's) perspective. A use-case diagram may depict all or some of the use cases of a system. Use-case diagrams can be used during analysis to capture the system requirements and to understand how the system should work. During the design phase, use-case diagrams can be used to specify the behavior of the system as implemented. The properties and relationships of a use case can be defined and maintained through the Use-Case Specification (see more below).

A use-case diagram can contain:

- actors ("things" outside the system)
- use cases (system boundaries identifying what the system should do)
- interactions or relationships between actors and use cases in the system

The following is an example use case diagram with five actors, four use cases, and seven



interactions:

Actors represent system users. They help delimit the system and give a clearer picture of what the system should do. It is important to note that an actor interacts with, but has no control over the use cases. An actor is someone or something that:

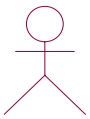
- Interacts with or uses the system
- Provides input to and receives information from the system
- Is external to the system and has no control over the use cases

Actors are discovered by examining:

- Who directly uses the system
- Who is responsible for maintaining the system
- External hardware used by the system
- Other systems that need to interact with the system

The needs of the actor are used to develop use cases. This insures that the system will be what the user expected.

An actor is a stereotype of a class and is graphically depicted as a "stickman" on a use-case diagram.



The name of the actor is displayed below the icon. Additional information about the actor can be placed in a Class Specification.

In its simplest form, a use case can be described as a specific way of using the system from a user's (actor's) perspective. A more detailed description might characterize a use case as:

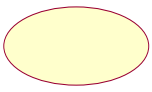
- a pattern of behavior the system exhibits
- a sequence of related transactions performed by an actor and the system
- delivering something of value to the actor

Use cases provide a means to:

- capture system requirements
- communicate with the end users and domain experts
- test the system

Examining the actors and defining what the actor will be able to do with the system best discovers use cases. Since all the needs of a system typically cannot be covered in one use case, it is usual to have a collection of use cases. Together this use case collection specifies all the ways of using the system.

The basic shape of a use case is an ellipse and is graphically depicted as follows:

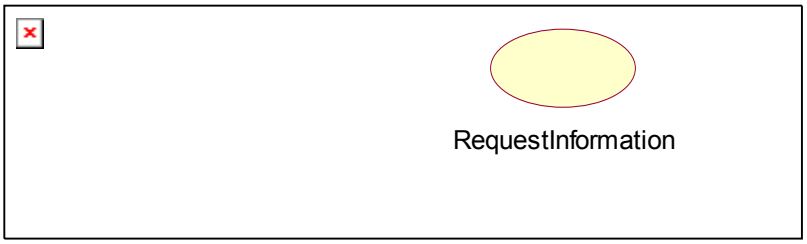


A use case may have a name, although it is typically not a simple name. It is often written as an informal text description of the actors and the sequences of events between objects. Use case names often start with a verb. The name of the use case is displayed below the icon.

Additional information about a use case can be viewed in the Use-Case specification. This is a textual description of the use case which can be incorporated into Rose either by typing the text directly into the tool or by inserting a file containing the textual information or a URL link to the textual information into the tool. A complete template for a Use Case Specification can contain the following:

- Use Case Identifier
- Characteristic Information
- Main Success Scenario
- Extensions
- I/O Variations
- Related (Optional) Information

Relationships can be added to the use case diagram to show interactions between actors and use cases. Association relationships are drawn from an actor to a use case. A Generalize relationship can be drawn between use cases to indicate that one use case uses the functionality of another or that another extends a use case through optional or conditional behavior.



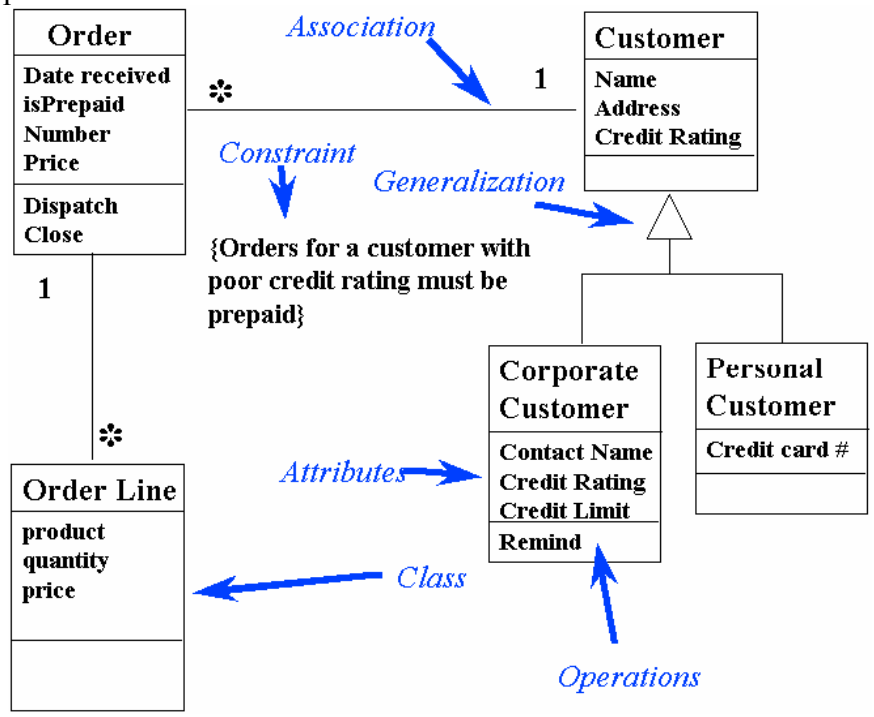
The interactions/relationships depicted on a use case diagram as an arrow (uni-directional) or line-segment without arrowhead (bi-directional) represents a pathway for communication. The communication can be between use cases and actors, between two classes or between a class and an interface. If two objects are usually considered independently, the relationship is an association. Associations are generally drawn uni-directional with the arrow indicating who or what is receiving the communication. The association name is typically a verb or a verb phrase and is used to identify the type or purpose of the relationship.

D-2 Class Diagram

The class diagram is a central modeling element for all object-oriented methods. This diagram describes the types of objects in the system and various kinds of static relationships that exist between them. There are three principal kinds of relationships which are important: associations

(a customer may rent a number of videos), subtypes (a nurse is a kind of person) and aggregation (an engine is part of an aircraft).

As can be seen in the following, a class diagram consists of class icons interconnected by different styles of lines representing the relationships between them. A class icon is drawn as a 3-part box, with the class name in the top part, a list of attributes (with optional types and values) in the middle part, and a list of operations (with optional argument lists and return types) in the bottom part. Operations are also known as methods.



Associations represent relationships between instances of types (a person works for a company, a company has a number of offices…). Associations may be bi-directional (can be navigated in either direction) or uni-directional (can be navigated in one direction only). One of the key aspects of associations is the cardinality of an association (sometimes called multiplicity). This specifies how many companies a person may work for, how many children a mother can have, etc. In the previous diagram two associations are labeled with a one-to-many notation. This is read, “a Customer may have many (*) Orders but an Order is associated with only one (1) Customer.”

A generalize relationship between classes shows that the subclass shares the structure or behavior defined in one or more “superclasses.” The generalize relationship is used to show a "is-a" relationship between classes. A generalize relationship is a solid line with an arrowhead pointing to the superclass.

Appendix E – Project Schedule

Summary of Changes from Last Report:

1. Tasks 1 through 50 removed for clarity (Refer to previous reports for complete Project Schedule).
2. Set task 12 complete (task not shown).
3. Set task 39 complete as of 2/17/00 (task not shown).
4. Set tasks 42, 43, 44, 46 to complete (task not shown).
5. Set task 47 complete on 2/22/00 (task not shown).
6. Changed dates for task 83 to undefined as requested at Session 2.

Id	Task Name	% Complete	Duration	Start	Finish	Predecessor	Assigned
51.	**OO Modeling**	0%	42d	Mon 02/28/00	Tue 04/25/00		
52.	**IDEF0 to OO Migration**	0%	16d	Mon 02/28/00	Mon 03/20/00		
53.	Migrate To-Be IDEF0 Model to OO Model (9)	0%	8d	Mon 2/28/00	Wed 3/8/00	50	GDIS,c3risk,Audrulis
54.	Draft IDEF0 to OO Migration Report	0%	3d	Wed 3/8/00	Mon 3/13/00	53	c3risk,GDIS,Audrulis
55.	Review Report Draft (consultant)	0%	2d	Tue 3/14/00	Wed 3/15/00	54	c3risk
56.	Review Report Draft (DCT)	0%	2d	Thu 3/16/00	Fri 3/17/00	55	DCT
57.	Generate Final Report	0%	2d	Mon 3/20/00	Tue 3/21/00	56	c3risk
58.	Generate Briefing on IDEF0 to OO Migration	0%	3d	Tue 3/21/00	Fri 3/24/00	57	GDIS,Audrulis,c3risk
59.	**Collaborative Session 3 (OO Modeling)**	0%	22d	Mon 03/27/00	Tue 04/25/00		
60.	Pre-session Set-up and Review	0%	1d	Mon 03/27/00	Mon 03/27/00	58	Audrulis,c3risk,GDIS
61.	OO Training Session (10)	0%	3h	Tue 03/28/00	Tue 03/28/00	12,60	Audrulis,c3risk,DCT,GDIS
62.	Briefing on IDEF0 to OO Migration (11)	0%	3h	Tue 03/28/00	Tue 03/28/00	61	Audrulis,c3risk,DCT,GDIS
63.	Discuss DCT Comments	0%	2h	Tue 03/28/00	Tue 03/28/00	62	Audrulis,c3risk,DCT,GDIS
64.	Review/Finalize DITT OO Model (12 & 13)	0%	3d	Wed 03/29/00	Fri 03/31/00	63	Audrulis,c3risk,DCT,GDIS
65.	Post-Session Clean-up	0%	1d	Mon 04/03/00	Mon 04/03/00	64	Audrulis
66.	**DITT To-Be Object Oriented Model Report**	0%	16d	Tue 04/04/00	Tue 04/25/00		
67.	Draft DITT To-Be Object Oriented Model Report (14)	0%	5d	Tue 04/04/00	Mon 04/10/00	65	GDIS,Audrulis,c3risk
68.	Review Report Draft (consultant)	0%	2d	Tue 04/11/00	Wed 04/12/00	67	c3risk
69.	Review Report Draft (DCT)	0%	3d	Thu 04/13/00	Mon 04/17/00	68	DCT
70.	Review Comment Telecon 1	0%	1d	Tue 04/18/00	Tue 04/18/00	69	c3risk,DCT,GDIS,Audrulis
71.	Review Report Draft (DCT)	0%	2d	Wed 04/19/00	Thu 04/20/00	70	DCT
72.	Review Comment Telecon 2	0%	1d	Fri 04/21/00	Fri 04/21/00	71	c3risk,DCT,GDIS,Audrulis
73.	Generate Final Report	0%	2d	Mon 04/24/00	Tue 04/25/00	72	c3risk
74.	**Collaborative Session 4 (System Requirements Document)**	0%	20d	Mon 05/01/00	Fri 05/26/00		
75.	Pre-session Set-up and Review	0%	1d	Mon 05/01/00	Mon 05/01/00	73	Audrulis,c3risk,GDIS
76.	Functional and System Requirements Review Session	0%	4d	Tue 05/02/00	Fri 05/05/00	75	Audrulis,c3risk,DCT,GDIS
77.	Post-Session Clean-up	0%	1d	Mon 05/08/00	Mon 05/08/00	76	Audrulis
78.	Generate Functional and System Requirements Document	0%	5d	Tue 05/09/00	Mon 05/15/00	77	GDIS,Audrulis,c3risk
79.	Review Document Draft (consultant)	0%	2d	Tue 05/16/00	Wed 05/17/00	78	c3risk
80.	Review Document Draft (customer)	0%	3d	Thu 05/18/00	Mon 05/22/00	79	DCT
81.	Review Comment Telecon	0%	1d	Tue 05/23/00	Tue 05/23/00	80	c3risk,DCT,GDIS,Audrulis

Id	Task Name	% Complete	Duration	Start	Finish	Predecessor	Assigned
82.	Generate Final Document	0%	3d	Wed 05/24/00	Fri 05/26/00	81	c3risk
83.	Modeling Planning Meeting (14 & 15)	0%	1d			76SS+3d	c3risk,DCT,GDIS

Appendix F - Acronyms

c3risk	c3risk, Inc.
CALL	Center for Army Lessons Learned
DITT	Defense Information Technology Testbed
DMS	Defense Messaging System
FIPS	Federal Information Processing Standard
FOIA	Freedom of Information Act
GDIS	General Dynamics Information Systems
ICOM	Input, Control, Output, Mechanism
IDEF0	Integrated Definition Language for Function Modeling
IDEF01X	Integrated Definition Language for Information Modeling
IDSC	Integrated Decision Support Center
IO	Improvement Opportunity
OO	Object-Oriented
PUB	Publication
RFI	Request for Information
UML	Unified Modeling Language
VRL	Virtual Research Library

Appendix G - References

1. Scoping Session Workshop Report - Phase 1A, 20-21 December 1999
2. AS-IS Workshop Report, 11-13 January 2000
3. TO-BE Workshop Report , 8-11 February 2000
4. c3risk inc report to the National Media Laboratory, *Center for Army Lessons Learned, DoD Information Technology Testbed*, 10 November 1999
5. U.S. Department of Commerce, Federal Information Processing Standards Publication 183 (FIPS PUB 183), *Integrated Definition for Function Modeling* (IDEF0), 1993 December 21
6. U.S. Department of Commerce, Federal Information Processing Standards Publication 184 (FIPS PUB 184), *Integrated Definition for Information Modeling* (IDEF01X), 1993 December 21
7. *Use Case Driven Object Modeling with UML: A Practical Approach*, Doug Rosenberg
8. *Visual Modeling with Rational Rose and UML,* Terry Quantrani.

Appendix H - Endnotes

1 DoD Information Technology Testbed Center for Army Lessons Learned TO-BE Workshop Report 8-11 February 2000

2 DoD Information Technology Testbed Migration Workshop Report 28 February to 2 March 2000

3 DoD Information Technology Testbed Center for Army Lessons Learned TO-BE Workshop Report 8-11 February 2000

4 Design Aggregation. Term utilized by c3risk inc to describe the collection, documentation analysis and determination of organizational system functions, functional requirements and data necessary to utilize commercial software and technologies to meet organizational needs. Design Aggregation also includes the identification of those functions and needs that are not going to be met by the system design architecture but that the organization will plan for in future upgrades or design